2015 Updating and Screening Assessment for

St Edmundsbury Borough Council

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

April 2015

Local Authority Officer	Matthew Axton
Department	Environmental Health
Address	West Suffolk House, Western Way, Bury St Edmunds, IP33 3YU
Telephone	01284 757041
e-mail	matthew.axton@westsuffolk.gov.uk
Report Reference number	SEBC/USA2015
Date	April 2015

Executive Summary

The UK Government published its strategic policy framework for air quality management in 1995 establishing national strategies and policies on air quality which culminated in the Environment Act 1995. The Air Quality Strategy provides a framework for air quality control through air quality management and air quality standards. These and other air quality standards and their objectives have been enacted through the Air Quality Regulations 2000 and (Amendment) Regulations 2002. The Environment Act 1995 requires local authorities to undertake an air quality review. In areas where air quality objectives are not anticipated to be met, local authorities are required to establish Air Quality Management Areas (AQMA) to improve air quality. St. Edmundsbury Borough Council completed the first round of its review and assessment of air quality in 2001. Since then further reviews of air quality have been completed to ensure compliance with the air quality objectives.

This Updating and Screening Assessment Report of Air Quality in St Edmundsbury has concluded that for the most part air quality in St Edmundsbury remains good. Road traffic emissions continue to be the main source of pollution where pollutant levels are close to the objective levels. The only exceedance of the annual mean objective level is recorded at the revoked AQMA in Great Barton. This AQMA was revoked in 2012 as there were no members of the public regularly present at the location therefore there is no risk to residents or members of the public. It was concluded that the Air Quality Management Order should not have been designated. The recorded levels at the Great Barton Post Office site have shown a steady decrease over the past 5 years. There have been no significant trends at other sites throughout the Borough over the past five years, with all other sites remaining under the national objective for nitrogen dioxide. The locations of some sites will be slightly adjusted in 2015 to take into account location of junctions on narrow streets.

With regards to the Borough, there have been no material changes or developments that put the Government's objectives for the seven prescribed pollutants at risk of being exceeded. It is concluded that a detailed assessment is not required.

Table of contents

List of Tables

List of Figures

Appendices

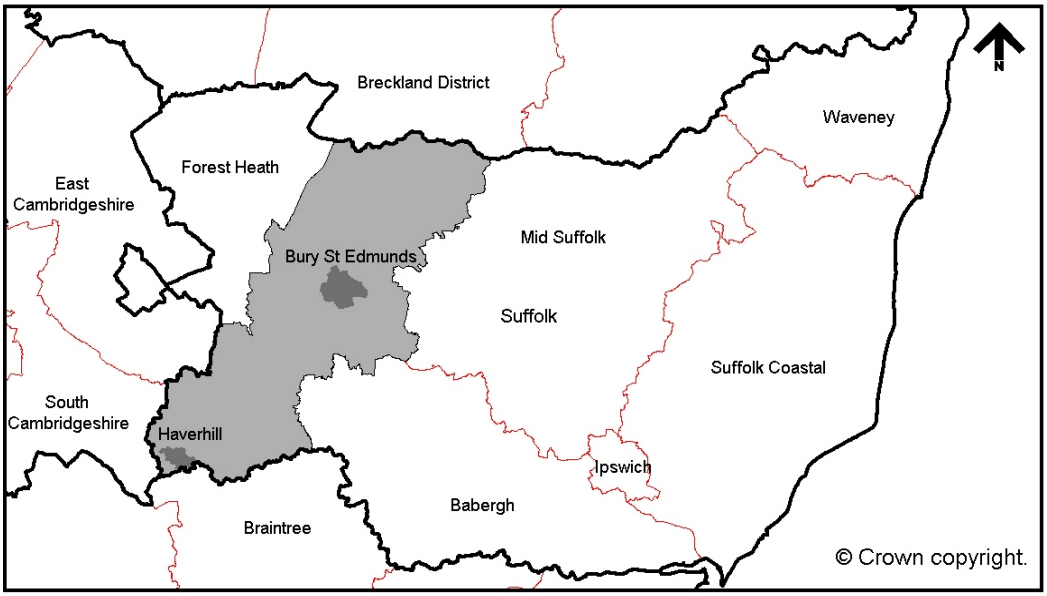
1 Introduction

1.1 Description of Local Authority Area

St Edmundsbury Borough Council is located in Western Suffolk. It has borders with Breckland district (Norfolk) to the north, Mid Suffolk and Babergh districts to the east, Braintree district (Essex) to the south, South and East Cambridgeshire districts and Forest Heath district to the west (See Figure 1.1) The borough has two main towns, Bury St Edmunds in the centre and Haverhill to the south but the large number of villages and small settlements ensure the predominantly rural character of the area is retained. The population of St Edmundsbury has grown steadily over the past 25 years, rising to 111,800 in 2013 (Office for National Statistics).

Industrial development is located primarily on estates in Bury St Edmunds and Haverhill although some of the larger villages, for example, Stanton, have small industrial areas. There are 29 Part A Processes and 51 Part B processes located within the borough; although these constitute potential sources of air pollution their effective regulation ensures that these industrial emissions do not significantly contribute to a failure to achieve national air quality objectives. However, as with many districts and boroughs, traffic emissions are the most likely contributory factor to a failure to meet air quality objectives. The A14 trunk road passes east - west through Bury St Edmunds with three interchanges that feed traffic into the town. As the town grows, congestion at these interchanges is of concern. Other heavily trafficked roads include the A143, A134 and the A1307 through Haverhill.

Figure 1.1 St Edmundsbury Borough Council



1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England,

Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedances 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

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 μg/m^3 (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances 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^3	Running annual mean	31.12.2003
	5.00 μg/m^3	Running annual mean	31.12.2010
1,3-Butadiene	2.25 μg/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 μg/m^3	Annual mean	31.12.2004
	0.25 μg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 μg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 μg/m^3	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 μg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004

	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

St Edmundsbury Borough Council has reported on all previous rounds of review and assessment in accordance with the guidance from LAQM TG (03) & (09). Table 1.2 lists the reports previously produced and their outcomes:

Table 1.2 Summary of Air Quality Reports for St Edmundsbury BC

Year	Report	Outcome
Jan 1999	First Stage Review	Move to stage 2 assessment
Feb 2000	Second Stage Review	Move to stage 3 assessment for NO_2
Jan 2001	Third Stage Review	Declaration of four AQMAs adjacent to A14 in Bury St Edmunds in respect of NO_2
Nov 2002	Stage Four Review and Assessment	Annual mean objective for NO_2 likely to be met. AQMAs revoked.
May 2003	Updating and Screening Assessment	Breaches of air quality objectives unlikely
2004	Progress Report	Breaches of air quality objectives unlikely
2005	Progress Report	Breaches of air quality objectives unlikely
2006	Updating and Screening Assessment	Breaches of air quality objectives unlikely
2007	Progress Report	Breaches of air quality objectives unlikely
May 2008	Progress Report	Detailed assessment for NO_2 along A143 Great Barton adjacent to the Post Office.
June 2009	Updating and Screening Assessment	Breaches of air quality objectives unlikely but confirms exceedances of NO_2 along A143 Great Barton adjacent to the Post Office.
Nov 2009	Detailed Assessment for Great Barton	Exceedances of NO_2 along A143 Great Barton adjacent to the Post Office. AQMA declared April 2010.
April 2010	Progress Report	Other than AQMA in Great Barton breaches of air quality objectives unlikely.
April 2011	Progress Report	Other than AQMA in Great Barton breaches of air quality objectives unlikely.
April 2012	Updating and Screening	Breaches of air quality objectives unlikely.

	Assessment	
April 2013	Progress Report	Other than former AQMA in Great Barton breaches of air quality objectives unlikely.
April 2014	Progress Report	Other than former AQMA in Great Barton breaches of air quality objectives unlikely.

Review and assessment of air quality in St Edmundsbury Borough commenced in 1997/8 and was reported in stages as detailed above. At the Third Stage of this review, four Air Quality Management Areas (AQMA's) were designated in respect of nitrogen dioxide (NO_2). This related to four areas adjacent to the A14 trunk road in Bury St Edmunds. Monitoring for NO_2 using diffusion tubes undertaken as part of the Stage Four assessment gave an annual mean level below the air quality standard of 40µg/m^3 and the AQMA's were consequently revoked in January 2003.

The most recent Progress Report in 2014 concluded that for the most part air quality in St Edmundsbury remains good. Road traffic emissions continue to be the main source of pollution where pollutant levels approach objective levels. One exceedance of the annual air quality objective for nitrogen dioxide was recorded at the Post Office in Great Barton. The site was inside an Air Quality Management Area (AQMA) in which a Detailed Assessment was carried out in 2009, which has been discussed further below. Other than this exceedance, the 2014 Progress Report concluded that there have been no material changes or developments that put the Government's objectives for the seven prescribed pollutants at risk of being exceeded.

Great Barton - Air Quality Management Area

A Detailed Assessment was carried out in 2009 at Great Barton which concluded the following: The annual mean Air Quality Objective for nitrogen dioxide is exceeded in the vicinity of the Post Office, The Street, Great Barton; No exceedance of the annual mean Air Quality Objective were identified at other locations of the A143 as it passed through the village of Great Barton. There are no exceedances of the 1-hour mean Air Quality Objective for nitrogen dioxide in Great Barton.

Since the 2009 Detailed Assessment, further discussions have taken place with DEFRA after advice was taken from an Environmental Lawyer and an air quality expert from the University of East Anglia. Based on this advice, the AQMA went through a consultation for revocation and the AQMA was subsequently revoked by an Order dated 19th December 2012. The reasons for the revocation are outlined below:

Further consideration of the requirements of the Act and accompanying Regulations has led the St Edmundsbury Borough Council to question the legitimacy of the designation.

The Air Quality (England) Regulations 2000 state that the achievement of the objectives shall be determined by reference to the quality of air at locations: which are situated outside buildings and where members of the public are regularly present. Legal advice has confirmed that both of these criteria must be satisfied: i.e. that the exceedance of the pollutant must be outside and that members of the public must be regularly present.

The advice that the air quality at the façade of a residential building should be used as a proxy for the likely annual exposure of members of the public resident in the property, and which should lead to a designation of an AQMA where the air quality objective is exceeded, is considered to be erroneous on two counts:

1. The achievement of the air quality objectives is by reference to air at outside locations and not inside residential properties; notwithstanding the above, the relationship between internal and external air is not 1:1 and the level of a pollutant outside should not be used as a proxy for the level inside.

2. The second limb of the regulations requires members of the public to be regularly present in the area where there is an exceedance of the air quality objective. Regularly present for the purposes of an annual mean objective means that people need to be in the area for a cumulative period of six months of the year. Observations of The Street, Great Barton, confirm that this criterion is not met.

The re-evaluation of the review and assessment of air quality at the AQMA in Great Barton, confirmed that the annual mean level of nitrogen dioxide outside buildings exceeds 40µg/m3, the objective level, but that there are no members of the public regularly present at that location. The likely exposure of residential occupiers to the pollutant is not relevant and therefore there is no risk to residents or members of the public. It is concluded that the Air Quality Management Order should not have been designated.

However, the position of the St Edmundsbury Borough Council regarding the Great Barton potential AQMA will remain under review, subject to further advice from DEFRA.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

No automatic monitoring was undertaken in 2014.

2.1.2 Non-Automatic Monitoring Sites

Currently only nitrogen dioxide is monitored in St Edmundsbury.

Nitrogen dioxide levels have been monitored in St Edmundsbury since 1993 using diffusion tubes at a number of locations across the borough. Over the years sites have been discontinued after it has been shown that the levels of nitrogen dioxide were unlikely to breach the Government's objectives, and new sites established where traffic congestion suggests that there may be a problem.

Eleven sites were monitored in St Edmundsbury during 2014. Of these, two sites were background locations one each in Bury St Edmunds and Haverhill. Four of the sites were positioned along the A143 as it passes through the village of Great Barton, which was previously an AQMA, as discussed in Section 1.4. Table 2.1 shows the details of diffusion tubes in 2014. One of the tubes in Great Barton (GB1 – The Lodge) slightly change position from the façade of the building to a street lamp post at the beginning of 2013, therefore this location has been treated as a new location from 2013 and has not be compared with previous years. The tube at Northgate Lodge also changed position at the beginning of 2011. The grid reference for a number of other sites has been slightly adjusted to give a more accurate reading, although the actual position has not changed.

The diffusion tubes are supplied by Environmental Scientifics Group. The preparation method use by the laboratory is 50% TEA in acetone. Appendix A to this report details the QA/QC procedures and how the bias adjustment factor has been calculated. The location plans of the diffusion tubes are presented in Appendix D.

Table 2.1 Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road	Does this location represent worst-case exposure?
BSE1	Eastgate Street	Urban Roadside	586069	264618	NO_2	N	N	Y (façade of building)	5.0m	Y
BSE2	Out Westgate	Urban Roadside	584888	263619	NO_2	N	N	Y (façade of building)	1.8m	Y
BSE3	Cullum Road	Urban Roadside	585236	263746	NO_2	N	N	Y (façade of building)	3.4m	Y
BSE4	Northgate Lodge	Urban Roadside	585446	264956	NO_2	N	N	Y (façade of building)	2.0m	Y
BSE5	Samson Close	Urban Background	584498	266084	NO_2	N	N	Y (9.5m)	1.4m	N/A
GB1	The Lodge	Roadside	588994	266846	NO_2	N	N	Y (22m)	1.3m	N
GB2	The Forge	Roadside	589241	267079	NO_2	N	N	Y (25m)	1.3m	N
GB3	Post Office	Roadside	589130	266969	NO_2	N	N	Y (façade of building)	1.4m	Y
GB4	1 Forge Bungalows	Roadside	589163	267013	NO_2	N	N	Y (4m)	6.5m	N
H/H 1	Withersfield Road	Urban Roadside	566891	245892	NO_2	N	N	Y (2.35m)	1.7m	Y
H/H 2	Shetland Road	Urban Background	568609	245575	NO_2	N	N	Y (8.65m)	1.7m	N/A

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Table 2.2 below shows the annual mean concentrations of nitrogen dioxide for 2014 adjusted for bias. Data capture rates at all sites is good. The full dataset of monthly mean values is provided in Appendix B to this report. The calculation of the bias of 0.81 is shown in Appendix A to this report.

Diffusion Tube Monitoring Data

Exceedances of the annual objective level of 40 µg/m3 is found at one site: Great Barton (GB3, Post Office).

An Air Quality Management Area (AQMA) was declared in Great Barton which included the Post Office. However this AQMA was revoked in December 2012, as discussed in Section 1.4. The mean annual value at this point has shown a steady decrease over the past 5 years.

An exceedance at The Lodge was also recorded, but this value has been distance adjusted from 40.1µg/m^3 to 23.9µg/m^3 and therefore no further assessment is required as the distance adjusted figure falls below the national objective value of 40µg/m^3.

The trends in the annual mean levels of nitrogen dioxide levels since 2009 are shown in Table 2.3 and graphically in Appendix C.

Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes in 2014

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2014 (Percentage)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.81) 2014 (μg/m^3)
BSE1	Eastgate Street	Urban Roadside	N	Single	100	N	N	33.5
BSE2	Out Westgate	Urban Roadside	N	Triplicate	100	N	N	33.1
BSE3	Cullum Road	Urban Roadside	N	Triplicate	100	N	N	31.7
BSE4	Northgate Lodge	Urban Roadside	N	Triplicate	97	N	N	26.5
BSE5	Samson Close	Urban Background	N	Single	100	N	N	14.1
GB1	**The Lodge**	**Urban Roadside**	**N**	**Triplicate**	**97**	**N**	**Y**	**23.9***
GB2	The Forge	Urban Roadside	N	Triplicate	100	N	N	29.5
GB3	**Post Office**	**Urban Roadside**	**N**	**Triplicate**	**100**	**N**	**N**	**43.7**
GB4	1 Forge Bungalows	Urban Roadside	N	Triplicate	97	N	N	36.5
H/H 1	Withersfield Road	Urban Roadside	N	Triplicate	97	N	N	38.3
H/H 2	Shetland Road	Urban Background	N	Single	100	N	N	13.7

*****Distance adjusted from 40.1μg/m^3 to 23.9μg/m^3

Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes (2010 to 2014)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) μg/m^3				
			2010 (Bias Adjustment Factor = 0.75)	2011 (Bias Adjustment Factor = 0.84)	2012 (Bias Adjustment Factor = 0.79)	2013 (Bias Adjustment Factor = 0.80)	2014 (Bias Adjustment Factor = 0.81)
BSE1	Eastgate Street	N	34.2	35.3	33.6	34.1	33.5
BSE2	Out Westgate	N	31.7	33.6	32.6	33.3	33.1
BSE3	Cullum Road	N	33.1	34.1	33.7	32.9	31.7
BSE4	Northgate Lodge	N	-	29.8	28.3	28.3*	26.5
BSE5	Samson Close	N	14.6	15.2	14.0	14.6	14.1
GB1	The Lodge	N	-	-	-	39.7	**40.1*** **
GB2	The Forge	N	31.1	34.6	33.3	31.9	29.5
GB3	Post Office	N	**48.5**	**48.2**	**46.1**	**46.7**	**43.7**
GB4	1 Forge Bungalows	N	34.9	39.6	37.5	37.9	36.5
H/H 1	Withersfield Road	N	35.6	41.1**	38.9	36.9	38.3
H/H 2	Shetland Road	N	11.6	15.1	13.7	14.5	13.7

*Reported incorrectly in text of 2014 report

**This value was distance adjusted in the 2012 USA to give a value of 34.8μg/m^3, but the unadjusted value has been provided here to provide a direct comparison with other years.
***This value is distance adjusted in Table 2.2, but unadjusted figure given here to allow direct comparison with previous years.

2.2.2 Other Pollutants Monitored

No other pollutants have been monitored in the local authority's area.

2.2.3 Summary of Compliance with AQS Objectives

St Edmundsbury Borough Council has examined the results from monitoring in the borough. Concentrations outside of the former AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

The following 'narrow streets' with residential properties within 2 metres from the kerb and which may suffer congestion (as defined in Table 5.1 of the Technical Guidance LAQM TG(09)) were identified during previous assessments:

Eastgate Street, Bury St Edmunds
Out Risbygate, Bury St Edmunds
Out Westgate, Bury St Edmunds
Southgate Street, Bury St Edmunds
Westgate Street, Bury St Edmunds
Withersfield Road, Haverhill

Monitoring of nitrogen dioxide is carried out by way of diffusion tubes on Eastgate Street, Out Westgate and Withersfield Road, the results of which are considered in Section 2.2. No exceedances of the annual objective for nitrogen dioxide were found and a detailed assessment in respect of these 'narrow congested streets' is not warranted. Out Risbygate, Southgate Street and Westgate Street have been considered in previous years and monitoring is no longer carried out due to the results being much lower than the annual objectives. There are no new 'narrow' streets in St Edmundsbury where the traffic flow exceeds 5,000 vehicles per day. However, the locations along Eastgate Street and Out Westgate will be moved to locations where traffic flow may be adversely affected by junctions and crossings and the nitrogen dioxide levels may therefore differ to those previously recorded.

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

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Busy streets (as defined in Table 5.1 of the Technical Guidance LAQM TG(09)) where people may spend one hour or more close to traffic were considered during earlier rounds of the review and assessment process. No relevant exposure was found at any of the locations considered. Since the last assessment no new locations have been found close to streets (within 5 meters), with more than 10,000 vehicles per day, where individuals are likely to exposed for more than one hour.

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

3.3 Roads with a High Flow of Buses and/or HGVs.

Roads with a high flow of buses and Heavy Goods Vehicles (as defined in Table 5.1 of the Technical Guidance LAQM TG(09)) were considered during earlier rounds of the review and assessment process. No relevant exposure was found at any of the locations considered. Consideration has again been given to roads where the proportion of buses and HGVs is likely to be in excess of 20%. No roads have been identified that meet this criterion.

St Edmundsbury Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Busy junctions were considered during earlier rounds of the review and assessment process. No relevant exposure was found at any of the locations considered. Nitrogen dioxide diffusion tubes are located on two junctions in Bury St Edmunds (Cullum Road and Northgate roundabout) where there is relevant exposure and where traffic flow is in excess of 10,000 vehicles a day. The annual average level of nitrogen dioxide at these junctions is below the objective level.

The Tollgate junction to the north of Bury St Edmunds on the A1101 does not appear to have been considered on previous rounds of the review and assessment. This has been considered as requiring assessment as traffic flows are in excess of 10,000 vehicles per day and there is relevant exposure within 10m of the junction. Details on the traffic flows, speeds and percentage of heavy vehicles is not available and therefore it is not possible to determine whether a detailed assessment is required. A diffusion tube will be placed at this junction from the beginning of 2015 and further action taken when these results are available.

Consideration has been given to new junctions but none have been found where there are more than 10,000 vehicles per day with relevant exposure within 10 meters of the kerb.

St Edmundsbury Borough Council has assessed newly identified junctions meeting the criteria in Section A.4 of Box 5.3 in TG(09), and concluded that it will not be necessary to proceed to a Detailed Assessment, however, as a precautionary measure, a diffusion tube will be position at a newly identified junction.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

A major relief road to the east of Bury St Edmunds (Eastern Relief Road) has been proposed and planning permission granted (see planning reference DC/14/0328/FUL at www.westsuffolk.gov.uk), however, it is estimated that traffic flows will not exceed 10,000 vehicles per day. The air quality assessment submitted with the application indicates that traffic will be diverted from areas with relevant exposure. Given the above, this road does not need to be considered.

St Edmundsbury Borough Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

No roads have been identified with significant changes in traffic flows.

St Edmundsbury Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

There are no bus and/or coach stations in St Edmundsbury where the number of bus movements exceeds 2,500 per day which is defined in Table 5.1 of the Technical Guidance LAQM TG(09)) as the threshold value for assessment.

St Edmundsbury Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

St Edmundsbury Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

A railway runs through Bury St Edmunds east to west with the track no closer than 19 meters to residential properties. Trains are not stationary for periods in excess of 15 minutes at any location where there is a potential for exposure to individuals.

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

4.2.2 Moving Trains

Rail lines with a heavy traffic of diesel passenger trains as described in Table 5.1 of the Technical Guidance LAQM. TG(09) do not pass through the Council's area.

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

4.3 Ports (Shipping)

St Edmundsbury Borough Council does not have any coastline and there are no ports or shipping within the borough.

St Edmundsbury Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

There have not been any planning approvals granted for industrial installations within the council's area that have required air quality assessments.

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

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

The last USA report in 2012 did not identify any sources as having potentially significant emissions either within the local authority's area or in neighbouring local authorities.

A review of the local authority's register of Part B industrial process has not identified any substantially increase emissions. The environment local to industrial sources has been examined and there are no new relevant exposures that need to be considered.

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

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

There have been no new or significantly changed industrial installations in St Edmundsbury, or within neighbouring authorities, that could impact on the local authority's area, since the last USA report in 2012.

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

5.2 Major Fuel (Petrol) Storage Depots

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

5.3 Petrol Stations

St Edmundsbury Borough Council's USA report of 2009 identified petrol stations in the council's area. The assessment concluded that there was no relevant exposure within 10 metres of the pumps. The 2012 assessment confirmed that there were no new petrol stations that had been brought into operation that meet the criteria in the technical guidance LAQM. TG(09). No new relevant exposures have been introduced in respect of any of the existing petrol stations. Since 2012, no new petrol stations that had been brought into operation that meet the criteria in the technical guidance LAQM. TG(09). No new relevant exposures have been introduced in respect of any of the existing petrol stations.

St Edmundsbury Borough Council confirms that there are no petrol stations meeting the specified criteria**.**

5.4 Poultry Farms

Section 6.9 of the Environmental Permitting (England and Wales) Regulations 2007 requires poultry farms with 40,000 places for poultry to obtain a permit from The Environment Agency to operate. There are four poultry farms that are permitted for this activity by the Environment Agency in St Edmundsbury. The poultry units at each of the farms are mechanically ventilated but the number of birds does not exceed 400,000, and do not, therefore, meet the specified criteria despite there being relevant exposure within 100 meters.

St Edmundsbury Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Three biomass boilers (Culford School, Culford; Clements CP School, Haverhill; and Westfield CP School, Haverhill) were assessed as part of the 2012 USA and it was concluded that a detailed assessment was not required in respect of any of these facilities.

Two additional biomass boilers have been identified since the 2012 USA, both being at Suffolk Mushrooms Ltd, Shepherds Grove Ind. Estate East, Stanton, Suffolk, IP31 2BG. These biomass boilers were approved under planning application SE/12/1038/FUL (www.westsuffolk.gov.uk). The combustion plants are both served by an 11metre high chimney with a diameter 400mm.

Assessments undertaken as part of the planning application confirmed that there would be no need for a detailed assessment.

St Edmundsbury Borough Council has assessed the biomass combustion plants, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.2 Biomass Combustion – Combined Impacts

The local authority does not hold any information concerning the number or type of small biomass combustion plants in the domestic or commercial sector. The suggested procedure in the technical guidance of identifying solid-fuel appliances in a 500x500m square would require an extensive door knocking exercise. However, there are no areas known to the local authority where the burning of solid fuels is particularly high and where there is a risk of an exceedance of the objective level for PM_{10}. In the circumstances it is proposed to keep the combined impact of small biomass combustion plants under review until such time that the guidance on the identification and assessment of these combined impacts has been developed further.

St Edmundsbury Borough Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.3 Domestic Solid-Fuel Burning

Previous USA's have identified a falling rate of domestic fuel burning from a relatively low base. Professional judgement and knowledge of the area has been used to assess the likelihood of any 500m x 500m areas with more than 50 dwellings burning coal/smokeless fuel. We consider the likelihood of any areas of significant burning to be taking place to be extremely low.

St Edmundsbury Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Fugitive and uncontrolled sources were considered as part of this authority's USA of 2006. No sources were identified that were likely to result in an exceedance of the PM10 objective. There are no new sites or new relevant exposures since that assessment was carried out that would result in a breach of the PM10 objective.

St Edmundsbury Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

Table 2.3 of this report and the graphs in Appendix C show relatively steady levels of nitrogen dioxide levels over the last five years, with slight annual fluctuations but no significant upward or downward trend. A single site breaches the national objective level, with all other sites being below the required levels, as has been the case throughout the last five years.

The one site in 2014 where the annual mean concentration of nitrogen dioxide exceeds the objective level is at Great Barton, where an AQMA has been revoked and is discussed in detail in Section 1.4 of this report. The second highest concentration of NO_2 recorded is also within Great Barton, however, due to the distance to a relevant receptor, this figure has been adjusted to below the national objective value of nitrogen dioxide.

No other sites exceed 38 $\mu g/m^3$, and no further action is required at any of the currently monitored sites.

8.2 Conclusions from Assessment of Sources

There are no new sources or new relevant receptors that have been introduced since last years Progress Report that will result in a breach of the air quality objectives.

8.3 Proposed Actions

This USA has not identified the need to proceed to a Detailed Assessment. Monitoring of nitrogen dioxide levels using diffusion tubes will continue across the Borough, with some new sites being introduced at junctions and narrow streets that have not previously been monitored or where previous monitoring may not have been positioned at the most sensitive location.

St Edmundsbury Borough Council will continue to monitor for nitrogen dioxide using diffusion tubes with the results of the 2015 monitoring being reported and assessed in the 2016 Progress Report.

9 References

DEFRA, 2009. Part IV of the Environment Act 1995, Local Air Quality Management. Technical Guidance, LAQM TG(09). 2009. London: DEFRA.

DEFRA, 2009. Part IV of the Environment Act 1995, Local Air Quality Management. Policy Guidance PG09. 2009. London: DEFRA.

DEFRA, 2007. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. 2007. London: DEFRA.

Environment Act 1995. c.25, London: HMSO.

Appendices

Appendix A: QA/QC Data - Diffusion Tube Bias Adjustment Factors

Diffusion tube preparation method

Nitrogen dioxide diffusion tubes are supplied by Environmental Scientifics Group who prepare the tubes by spiking acetone:triethanolamine (50:50) onto grids prior to being assembled. The tubes are desorbed with distilled water and the extract analysed using a segmented flow analyser with ultraviolet detection. The exposed tubes are analysed in accordance with Environmental Scientifics Group standard operating procedure HS/WI/1015 issue 14, a method which complies with the guidelines set out in DEFRA's 'Diffusion Tubes For Ambient NO2 Monitoring: Practical Guidance'. The analysis of diffusion tube samples to determine the amount of nitrogen dioxide present on the tubes is within the scope of their UKAS schedule. Environmental Scientifics Group participates in the WASP scheme and are currently ranked as a category good laboratory.

Diffusion tube bias adjustment factors

A co-location study to determine diffusion tube bias has not been carried out in St Edmundsbury. The diffusion tube bias used in this report uses national data from co-location which is available on the air quality review website. Table A.1 below shows the results of the co-location study giving an overall factor of 0.81.

Table A.1: Results of co-location studies to calculate diffusion tube bias.

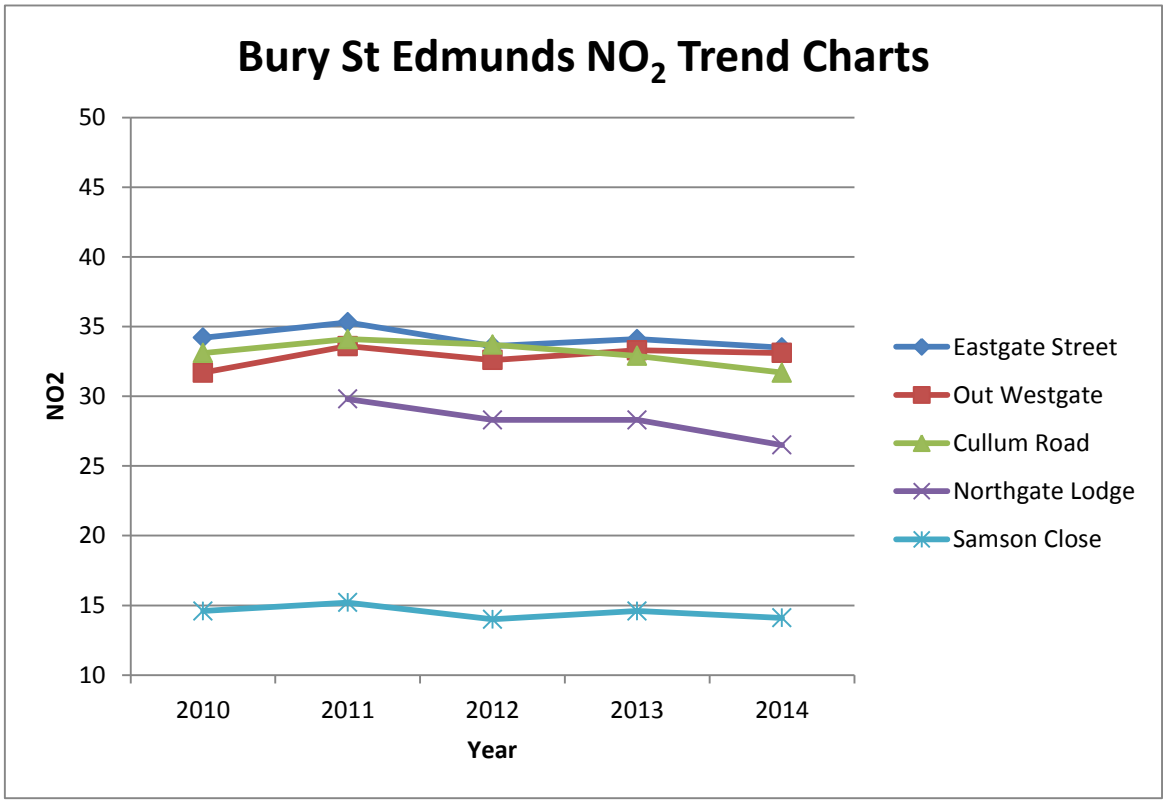
Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m^3)	Automatic Monitor Mean Conc. (Cm) (µg/m^3)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
R	Cambridge City Council	12	47	37	25.5%	G	**0.80**
R	Dumfries and Galloway Council	12	35	30	16.5%	G	**0.86**
UB	Falkirk	12	23	20	19.3%	G	**0.84**
B	Gravesham Borough Council	12	27	25	11.6%	P	**0.90**
R	Gravesham Borough Council	12	40	31	29.6%	G	**0.77**
UB	Kingston upon Hull City Council	12	32	26	22.6%	G	**0.82**
KS	Marylebone Road Intercomparison	10	109	80	35.2%	P	**0.74**
R	North East Lincolnshire Council	11	59	49	19.5%	G	**0.84**
R	North East Lincolnshire Council	11	34	30	12.3%	G	**0.89**
B	Pembrokeshire Council	11	7	3	110.8%	P	**0.47**
KS	South Northamptonshire Council	11	43	31	36.5%	G	**0.73**
UI	Stockton on Tees	11	25	22	17.7%	P	**0.85**
R	Stockton on Tees	12	21	16	35.2%	G	**0.74**
R	Swale Borough Council	9	42	33	28.4%	P	**0.78**
R	Swale Borough Council	12	50	38	31.7%	P	**0.76**
SU	Thanet District Council	12	19	17	9.0%	P	**0.92**
R	Thanet District Council	12	28	27	6.0%	P	**0.94**
R	Wrexham County Borough Council	10	23	22	5.6%	G	**0.95**
UB	City of York Council	11	24	19	28.4%	P	**0.78**
R	City of York Council	10	37	27	36.7%	G	**0.73**
R	City of York Council	11	32	28	12.4%	G	**0.89**
R	City of York Council	11	40	36	12.7%	G	**0.89**
	Overall Factor[3] (22 studies)				**Use**		**0.81**

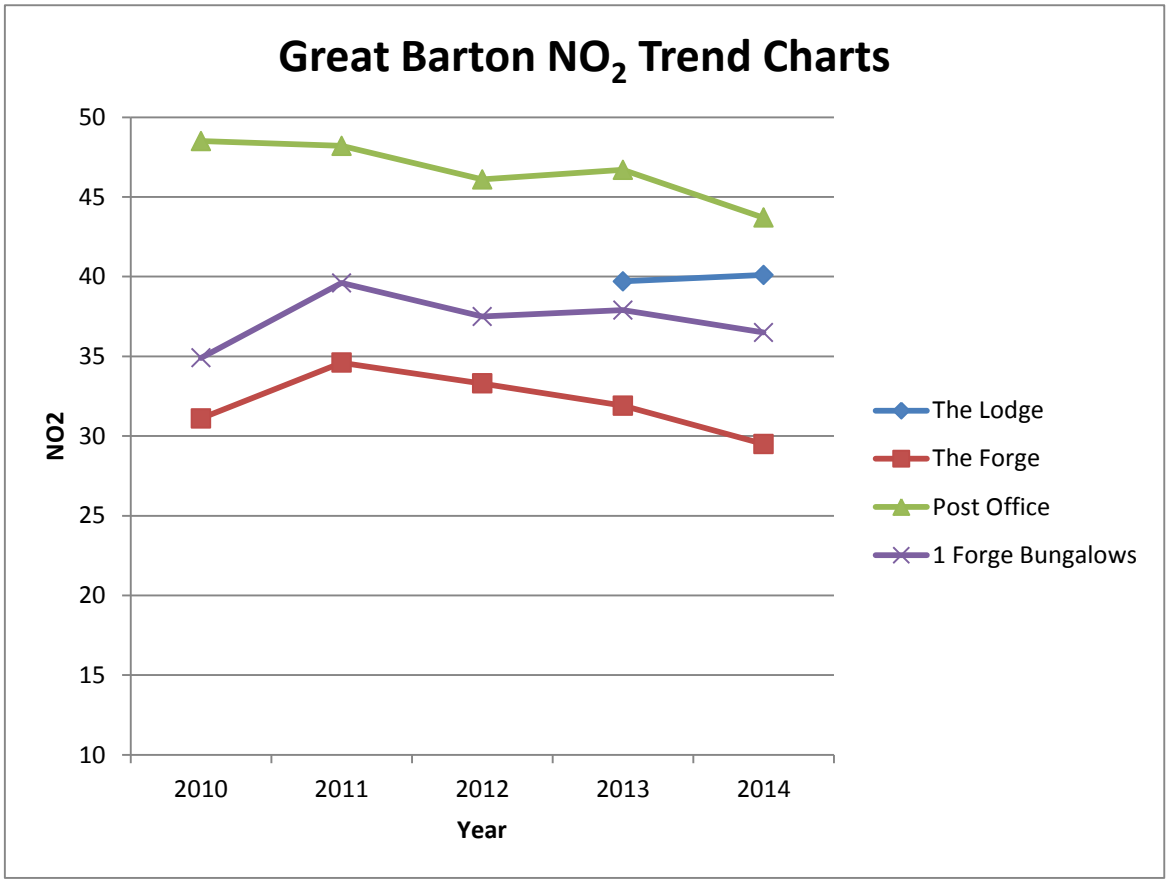
Appendix B: Monthly mean values (in µg/m3) of nitrogen dioxide diffusion tube data

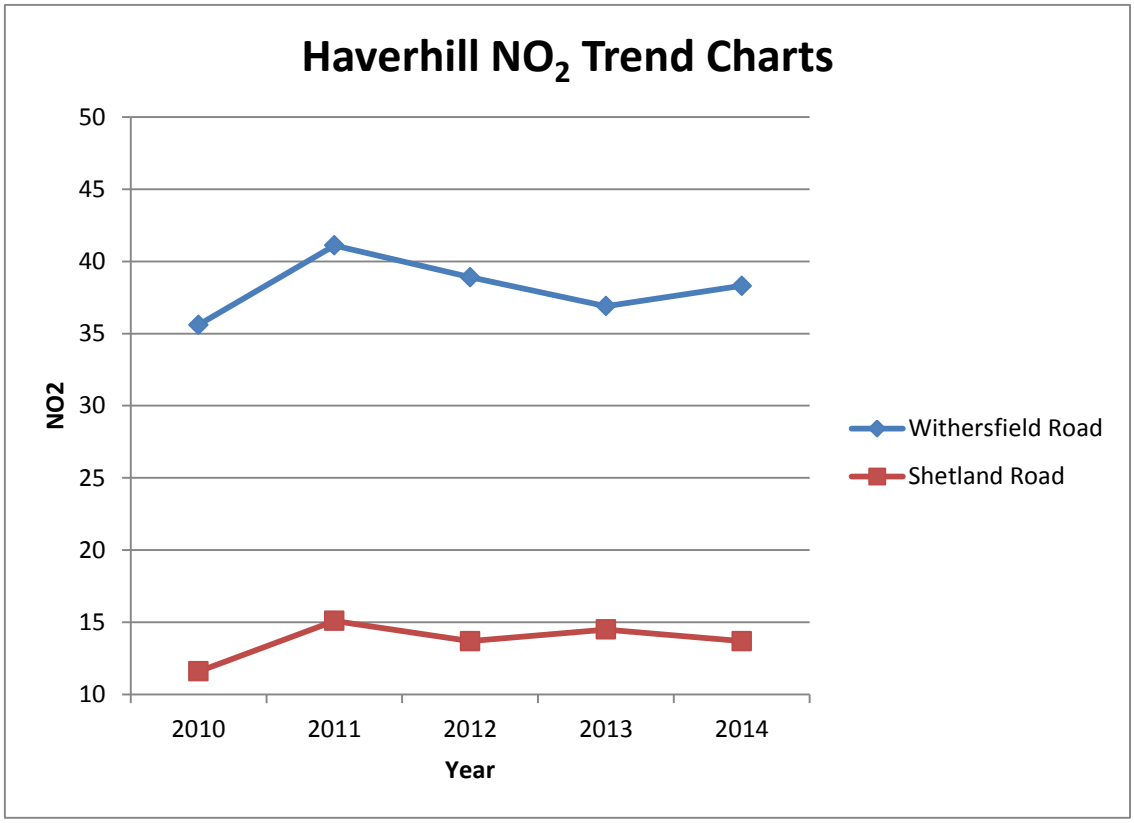
Location	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Data Capture (months)	Mean	Bias Adj (0.81)	Location Total
37 Eastgate St (BSE)	46.4	47.7	39.6	40.6	42.2	33.2	40.1	36.7	38.6	46.3	34.9	49.6	12	41.3	33.5	33.5
Out Westgate (BSE)	52.3	46.9	47.8	40.4	34.6	28.8	30.4	36.1	41.6	47.3	42.7	41.4	12	40.9	33.1	33.1
Out Westgate (BSE)	46.9	46.2	48.6	41.3	35	29.6	30.4	35.8	41.5	52.9	41.6	43.1	12	41.1	33.3	
Out Westgate (BSE)	51.9	49.4	48.6	39.3	36.4	26	30.5	35.9	38.9	50.2	43.5	35.5	12	40.5	32.8	
30 Cullum Rd (BSE)	39.2	44.9	46.3	38.3	36.2	30.5	35.1	35.1	39	38.3	37.1	52.1	12	39.3	31.9	31.7
30 Cullum Rd (BSE)	31.8	46.1	49.5	38.9	32.2	24.3	32.1	34.7	42.9	38.2	35.2	50.2	12	38.0	30.8	
30 Cullum Rd (BSE)	37.4	48.5	42	38.5	32.8	28.1	36.6	37	46.8	39.3	33.6	59.7	12	40.0	32.4	
Northgate Avenue (BSE)	32.3	29.8	40	27.5	-	27.7	29.9	28.6	39.4	39.2	28.4	37	11	32.7	26.5	26.5
Northgate Avenue (BSE)	32.4	29.4	39.6	33.7	28.2	25.9	29.3	32.2	45.2	38.7	24.7	36.9	12	33.0	26.7	
Northgate Avenue (BSE)	30.5	24.9	39.1	34.4	30.7	26.5	28.9	32.8	39.7	40.3	23.7	36.1	12	32.3	26.2	
Samson Close (BSE)	26.6	20.9	20.5	15.7	13.6	8.7	9.5	12.8	13.3	26.9	16.1	23.9	12	17.4	14.1	14.1
The Lodge, Gt Barton	51	55.4	48.9	44.6	51.4	39.4	36.7	46.1	57	58	52.7	46.4	12	49.0	39.7	40.1
The Lodge, Gt Barton	49.8	55.1	46	46.2	50.9	41	46.5	47	56.6	55.4	54.7	50.5	12	50.0	40.5	
The Lodge, Gt Barton	56.8	53.3	50.2	48.7	37.4	41.5	43.6	46.6	57.1	56.6	51.8	-	11	46.7	37.8	
The Forge, Gt Barton	41.6	40.2	39.7	34	28.3	25.7	27.7	26.6	40	42.5	31.3	40.3	12	34.8	28.2	29.5
The Forge, Gt Barton	49.4	45.7	30.2	29.4	23.6	31.3	28.5	30	41.3	45.6	42.1	41.7	12	36.6	29.6	
The Forge, Gt Barton	47.6	44.6	32.8	37.4	33.1	23.8	33.3	34	36.1	44.1	41.1	45.6	12	37.8	30.6	
Post Office, Gt Barton	50.4	48.8	54.8	51.7	49.1	48.5	55.7	52.2	68.8	61.8	57.1	65.1	12	55.3	44.8	43.7
Post Office, Gt Barton	44.3	53.1	46.4	53.5	50.7	39.2	57.2	51.2	60.7	53.3	56.2	63	12	52.4	42.4	
Post Office, Gt Barton	49.2	55.2	56.1	49.1	55.8	43.4	49	49.1	60.5	59.7	55.5	66.3	12	54.1	43.8	

Location	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Data Capture (months)	Mean	Bias Adj (0.81)	Location Total
1 Forge Bungalows, Gt Barton	51.6	55.7	44.4	37.7	29.2	34.9	31.6	37.3	47.4	54.6	53	50.6	12	44.0	35.6	36.5
2 Forge Bungalows, Gt Barton	55.3	58.7	36.7	40.3	36.6	30	35.5	41.4	48.1	54.1	54.1	60	12	45.9	37.2	
3 Forge Bungalows, Gt Barton	49.9	52.7	45.9	26.3	40.7	-	37.7	37.6	45.7	61.6	53	48.2	11	45.4	36.8	
Withersfield Rd, Haverhill	62.2	62.1	48.9	40.9	47	23.9	36.1	41.1	45.9	43.9	52	48.3	12	46.0	37.3	38.3
Withersfield Rd, Haverhill	58.6	58.2	41.3	55.8	39.9	29.2	35.4	43	46.1	51.3	54.8	60.1	12	47.8	38.7	
Withersfield Rd, Haverhill	61.1	52.3	47.5	42.5	45.1	35.3	41.4	34.1	43.4	66.7	57.6	-	11	47.9	38.8	
Shetland Rd, Haverhill	24	22.9	19.7	14.9	11.4	9.3	9.3	12.7	12.8	27.9	18.5	20	12	17.0	13.7	13.7

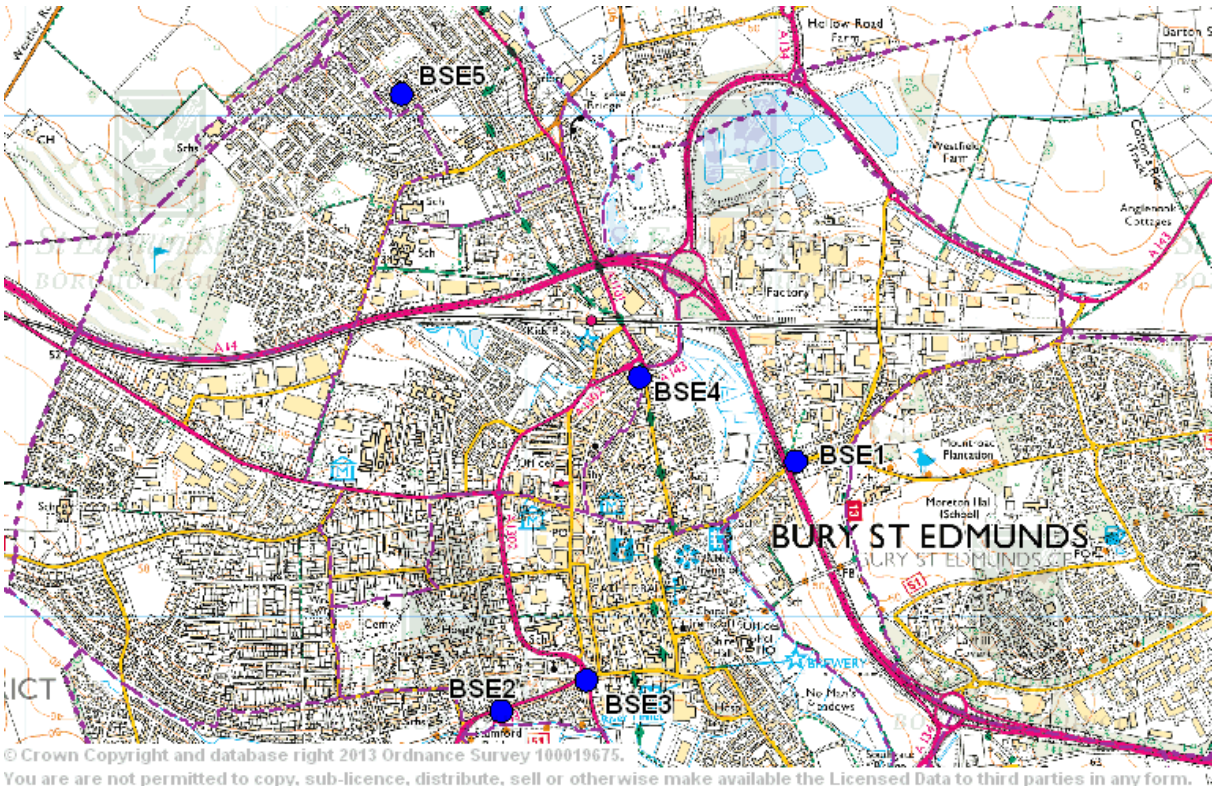
Appendix C Trends in Air Quality



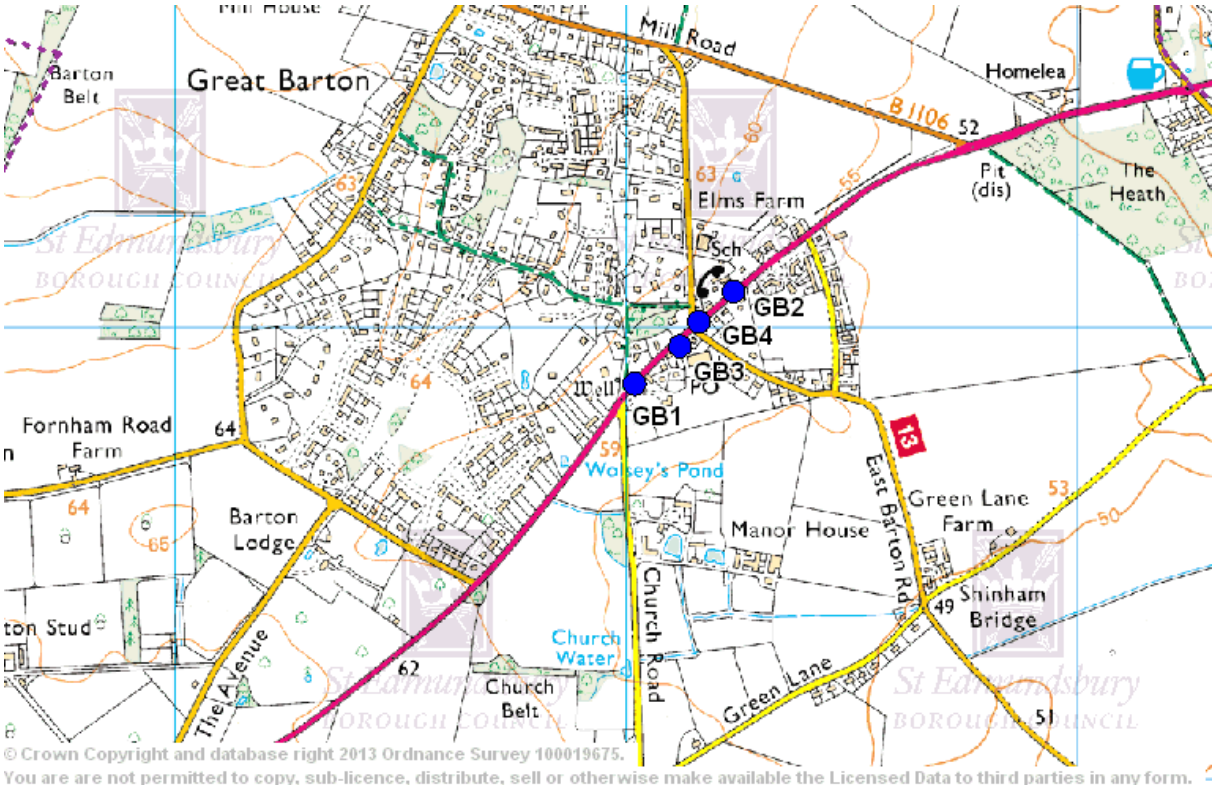



Haverhill NO2 Trend Charts
50
45
40
35
30
25
20
15
10
NO2
2010
2011
2012
2013
2014
Year
Withersfield Road
Shetland Road

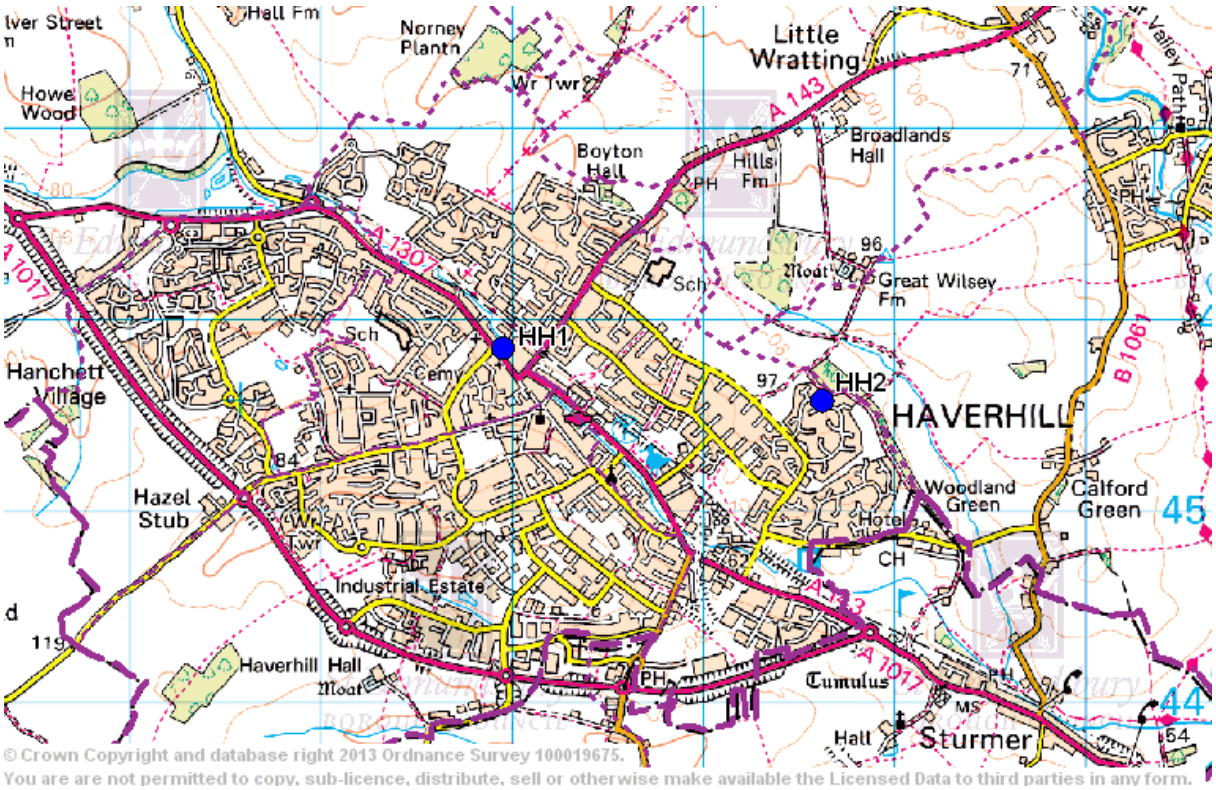
Appendix D Diffusion Tube Location Plans



Bury St Edmunds Diffusion Tube Locations



Great Barton Diffusion Tube Locations



Haverhill Diffusion Tube Locations