Forest Heath
District Council

2015 Updating and Screening Assessment for

Forest Heath District Council

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

April 2015

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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. Forest Heath District 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 Air Quality Update and Screening Assessment summarises the results of air quality monitoring across the district during the 2014 calendar year, which has focused on nitrogen dioxide. The monitoring confirms that the general trend in the district is that levels of nitrogen dioxide are generally dropping below the national objective over time.

Only one slight exceedence of the national objective for nitrogen dioxide was reported in Forest Heath, which was in Newmarket within the AQMA by the taxi rank on the High Street, but monitoring indicates that the levels of nitrogen dioxide within the AQMA are falling. FHDC continues to work on the Air Quality Action Plan focusing on the improvement of the air quality in Newmarket and works closely with the Transport & Highways Delivery Group of the Newmarket Vision Steering Group to improve traffic flow through the town and ultimately the air quality. Suffolk County Council, FHDC, the Jockey Club and other agencies are all represented on the group.

Levels in Brandon through the town along London Road and the High Street continued to be slightly elevated, which can be attributed to congestion as a result of the frequent closure of the level crossing on the High Street/Mundford Road and higher than normal traffic levels through the town while construction on the major project on the A11 to dual it from the Fiveways Roundabout in Barton Mills to Thetford continued. This was completed in December 2014, and the traffic is now signposted to avoid travelling through Brandon, with the expectation that the air quality in the town will significantly improve. Detailed monitoring throughout 2015 will continue in order to assess whether any further action is required.

Consequently, there is currently no requirement to move to a Detailed Assessment for any area in the district, with regards to nitrogen dioxide, and the expectation is that the continuing work on the AQAP in Newmarket and the diversion of the traffic from Brandon will see further reductions of the levels of nitrogen dioxide. Additionally, there have been no material changes or developments that put the Government's objectives for all seven prescribed pollutants at risk of being exceeded, which, in conclusion does not require the undertaking of a Detailed Assessment for any of the other prescribed pollutants.

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1 Introduction

1.1 Description of Local Authority Area

Forest Heath District Council (FHDC), as illustrated in Figure 1.1 below, lies within the county of Suffolk, bordered by four local authorities; the Borough Council of Kings Lynn & West Norfolk, Breckland District Council, East Cambridgeshire District Council and St Edmundsbury Borough Council. FHDC covers 37,398 hectares and in 2013, the population of the district was 63,300 (National Online Manpower Information System), of which approximately 12,000 are US personnel and their dependents stationed at RAF Lakenheath and RAF Mildenhall.

The towns of Newmarket, Mildenhall and Brandon and the airbases at Mildenhall and Lakenheath are situated within FHDC. Also, the district is crossed by the A11 and A14 trunk roads.

Figure 1.1: the Forest Heath District Council Area

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 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.

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 micrograms per cubic metre $\mu g/m^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 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 $\mu g/m^3$	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 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

FHDC 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:

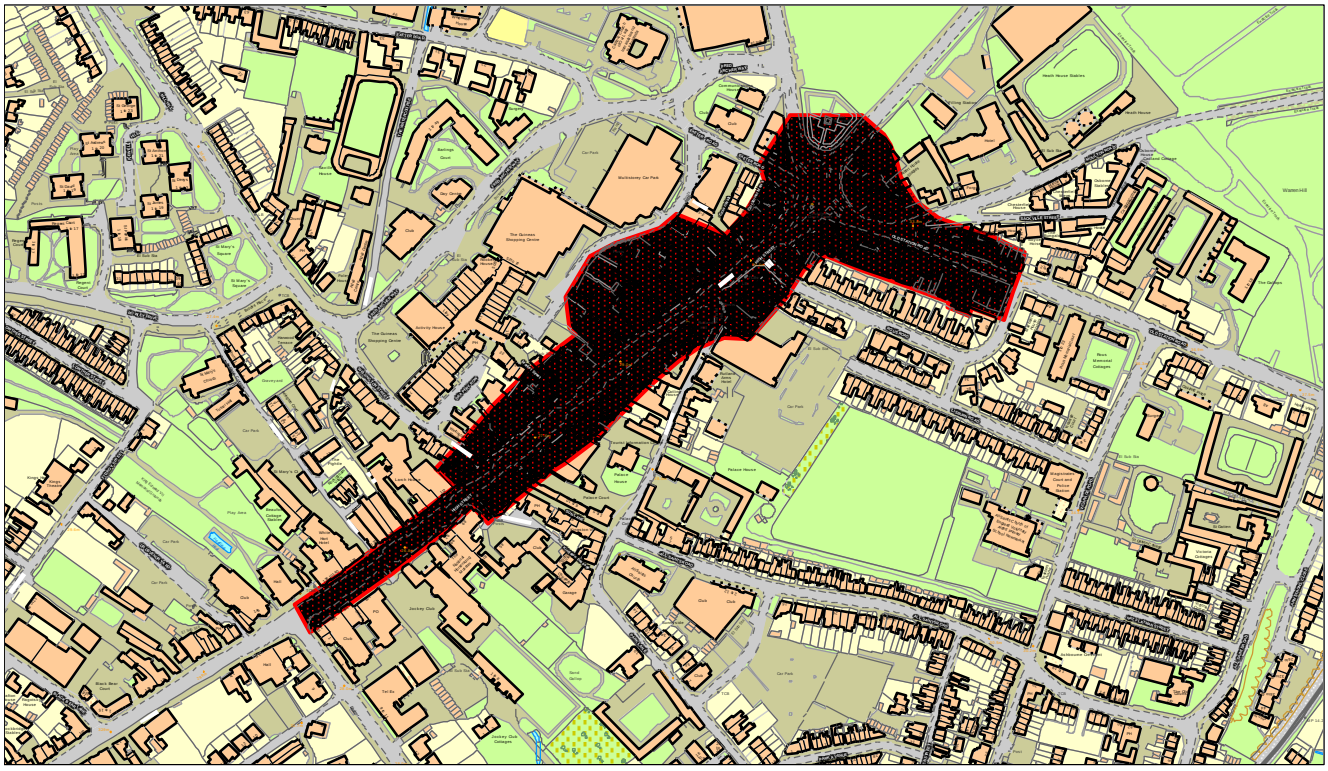
Table 1.2: Previous LAQM Reports:

YEAR	REPORT	OUTCOME
2006	USA	Accepted by Defra – no further action
2007	Progress Report	DA required for NO2 on the High Street and Old Station Road, Newmarket
2008	Progress Report	Accepted by Defra – no further action
2009	USA	Accepted by Defra – no further action
2010	Progress Report	No comment from Defra
2011	Progress Report	Accepted by Defra after identifying the need for a DA in Brandon
2012	USA	Accepted by Defra
2013	Progress Report	Accepted by Defra
2014	Progress Report	Accepted by Defra

The results from the 2008 PR identified several areas in Newmarket where the annual mean air quality objective for N02 (40µ/m³ annual mean) had not been met and therefore there was a strong possibility that FHDC would have to declare an AQMA. A Detailed Assessment (DA) was undertaken in Newmarket by TRL Ltd and the findings reported to the Department of Environment, Food and Rural Affairs (Defra). Following the reporting of the DA, Defra requested and received further air quality information, which then led to the confirmation that FHDC should declare an AQMA by April 2009 with regards to exceedences of the objective concentration for NO_2. The AQMA was to include areas of Newmarket High Street, Old Station Road and the Clock Tower gyratory. There are residential properties within these areas and it will be the primary consideration to improve air quality for these residents and visitors.

Figure 1.2 Map of Newmarket AQMA Boundary

High Street and Old Station Road, Newmarket - AQMA boundary



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

FHDC currently only monitors for nitrogen dioxide and the details of the monitoring stations can be found below.

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 C.

Table 2.1 Details of Non-Automatic Monitoring Sites

Site ID	Site Type	OS Grid Ref (TL)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Worst-case Location?
S1 Mildenhall Market St/High Street	**R**	571068 274639	Y	3m	Y
S2 Mildenhall taxi rank	**O**	571273 274641	Y – 18	30m	Y
S3 Mildenhall Kingsway	**R**	571326 274780	Y – 0.5	2m	Y
S4 Mildenhall Field Road	**R**	571127 275174	Y – 13	1.5m	N
S5 Beck Row Bird in Hand Pub	**R**	568819 277788	N	1.7m	N
S6 Brandon, 52 London Road	**R**	578206 286407	Y – 7	1.1m	N
S7 Lakenheath Albert Rolph Drive	**B**	572071 281607	Y – 20	1m	N
S8 Lakenheath High Street	**K**	571378 282855	Y – 3.5	N/A	Y
S9 Brandon London Road/Church Street	**K**	578073 286254	Y - 8	N/A	Y
S10 Brandon town hall	**B**	578406 286460	N	N/A	N
S11 Junction London Rd/Stores St	**R**	578351 286503	N	1.6m	Y
S12 Brandon Thetford Road	**R**	579160 286357	Y – 8.5	1.7m	Y
S13 Exning just past A14 overpass	**K**	562214 265466	Y - 3	N/A	Y
S14 Nimbus Way, Newmarket adjacent to A14	**B**	563205 265853	N	N/A	Y
S21 Tescos roundabout, Newmarket	**R**	563886 265165	N	2.4m	N
S15 Brandon, London Road/Coulson Lane	**R**	578270 286467	Y – 7.6	1.5m	Y
S16 Brandon, Hellesdon House, High Street	**R**	578372 286774	Y	1.5m	Y
S17 Brandon, Riverside Lodge, High Street	**K**	578372 286867	Y – 3.3	N/A	Y
S18 Brandon, Boots, High Street	**R**	578395 286633	N	2.5	N
S19 Brandon, Boots, High Street	**R**	578395 286633	N	2.5	N
S20 Brandon, Boots, High Street	**R**	578395 286633	N	2.5	N

S22 Red Lodge Newmarket Road	**K**	570009 270763	Y – 13	N/A	N
S23 Red Lodge Heath Farm Road	**B**	569096 270282	N	N/A	N
S24 Kentford Station Road/Bury Road	**R**	570156 266657	N	3m	Y
S25 Newmarket Old Station Road	**R**	564707 263493	Y – 2	1.7m	Y
S26 Newmarket Sun Lane	**B**	564347 263340	N	10m	N
S27 Newmarket High Street (Costa)	**K**	564337 263343	Y	N/A	Y
S28 Newmarket High Street (KFC)	**R**	564307 263338	Y – 1	3.3m	Y
S29 Newmarket Post Office	**K**	564233 263274	Y	N/A	Y
S30 Newmarket Memorial Park	**B**	564138 263301	Y	N/A	N
S31 Newmarket High Street/Blackbear Lane	**K**	564043 263159	Y - 3	N/A	Y
S32 Newmarket High Street taxi rank	**K**	564362 263381	Y	N/A	Y
S33 Market Street EE shop	**B**	564380 263407	Y	11m	N
S34 Clock Tower	**R**	564550 263544	Y	2.5m	Y
S35 Newmarket High Street Rutland Arms	**K**	564480 263464	Y	N/A	Y
S36 Newmarket High Street Cancer Research	**B**	564516 263474	Y	13m	N
S37 Newmarket High Street SAVERS	**K**	564383 263381	Y	N/A	Y
S38 Newmarket Station Approach	**K**	564375 262849	N	N/A	N
S39 Newmarket Exning Road Leisure Centre	**R**	563776 264094	N	1.5m	Y

Note: R- roadside sampling site within 1 – 5m from kerb
K – kerbside sampling point within 1m from kerb
B – background sampling site
O – other i.e. car park

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.

Table 2.2: Annual Mean (2014) NO_2 Diffusion Tube Measurements in Forest Heath (µg/m^3)

Site ID	Location	Data Capture 2014 %	Annual mean concentrations 2014 (µg/m^3) Adjusted for bias
	Mildenhall		
S1	Market St/High St	83	22.6
S2	Taxi Rank	92	17.0
S3	Kingsway	83	33.5
S4	Field Road	100	21.9
	Beck Row		
S5	Bird in Hand Pub	100	18.5
	Lakenheath		
S7	Albert Rolph Drive – junction with Avenue Rd	100	14.3
S8	High Street - zebra crossing	100	19.2
	Brandon		
S9	Junction: London Rd/Church Rd - traffic lights	100	35.6
S10	Town Hall - drainpipe on corner of building	100	13.7
S11	Junction: London Rd/Stores St on post outside estate agents	92	36.9
S6	L/P outside 52 London Rd (north side) next to trellis fence	100	37.8
S15	L/P at junction of London Rd/Coulson Lane	92	28.4
S16	Parking signpost outside Hellesdon House on High Street	83	27.4
S17	L/P outside 78 (Riverside Lodge) on High Street	92	32.5
S18	L/P outside Boots on High Street - colocation	100	39.0
S19	L/P outside Boots on High Street - colocation	100	37.9
S20	L/P outside Boots on High Street - colocation	92	38.6
	Average result for S18 – 20 = 38.5		
S12	Thetford Road - wooden telegraph pole outside No.175	100	19.0
	Red Lodge & Kentford		
S22	Top of Newmarket Rd on lamppost	100	16.3
S23	Red Lodge: Heath Farm Rd	92	17.8
S24	Kentford: junction Station Rd/Bury Rd	100	20.0
	Newmarket Town Centre (AQMA)		
S25	Old Station Rd - nr Rous Rd Junction	67	33.1 (30.1)
S26	Sun Lane	100	19.7

S27	Costa – High street	100	35.2
S28	KFC – High Street	100	32.2
S29	Post Office – High Street	**83**	38.6
S30	Park Area – off the High Street	92	14.3
S31	Junction: Blackbear Lane/High Street	100	28.3
S32	Taxi Rank	83	**42.9**
S33	Market Street off the High Street	100	21.1
S34	Clock Tower – High Street	100	32.8
S35	Rutland Arms – High Street	100	34.6
S36	Cancer Research – High Street	100	21.3
S37	Savers – High Street	92	37.1
	Newmarket Area		
S38	Station Approach	92	13.1
S39	Exning Road - leisure centre	100	17.8
S13	Exning: lamppost on Church street just past A11	75	27.9
S14	Nimbus Way adjacent to A14	100	22.7
S21	Fordham Road – Tescos roundabout	100	26.7

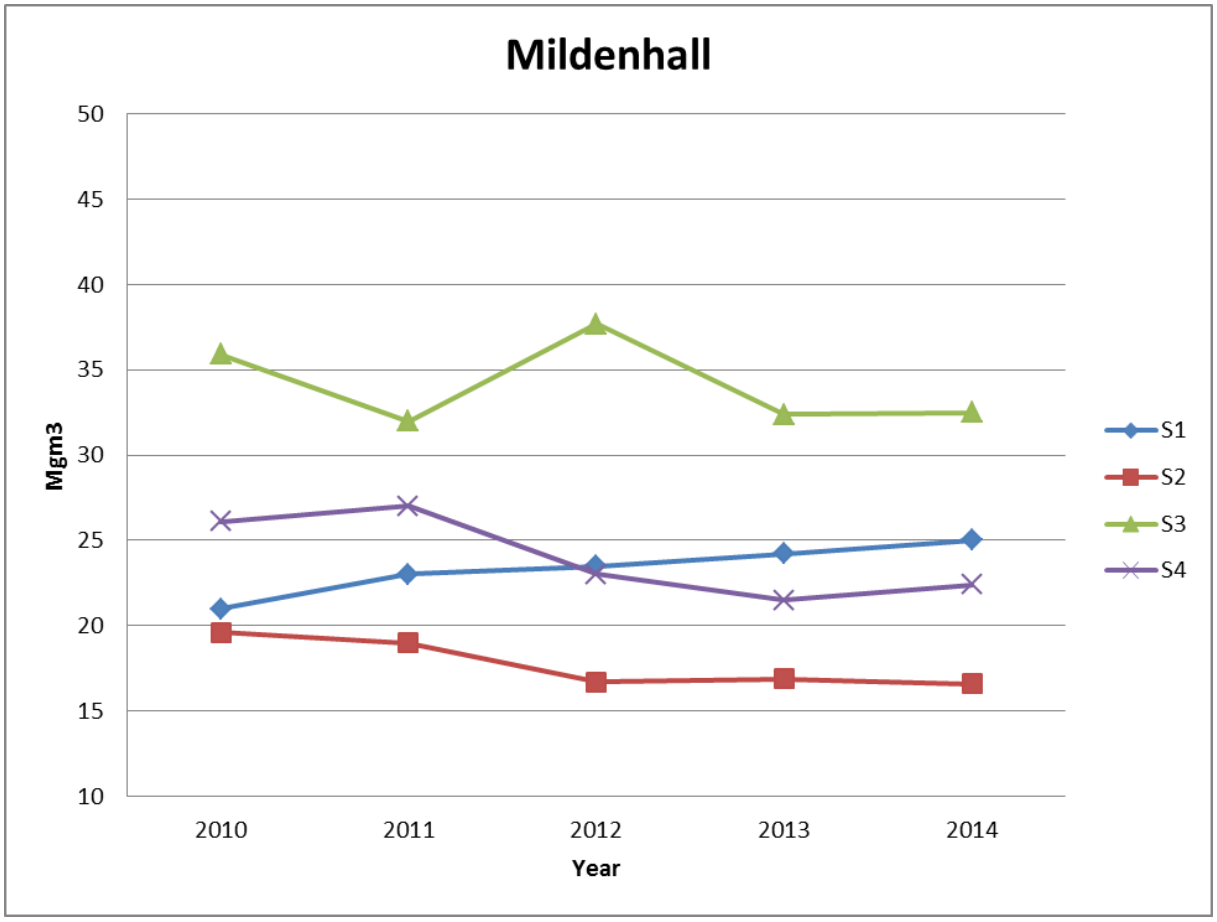
Note:

- Bias adjustment factor of 0.81 calculated from version 03/15 of the spreadsheet by the LAQM support pages supplied by Defra (see Appendix A)
- All exceedences are shown in red and highlighted
- Location maps of all monitoring stations can be found at Appendix C
- Estimation of annual mean concentration from short-term monitoring data for S25 (in brackets above) was calculated on a three month period mean between Jan – Mar in accordance with LAQM.TG(09)

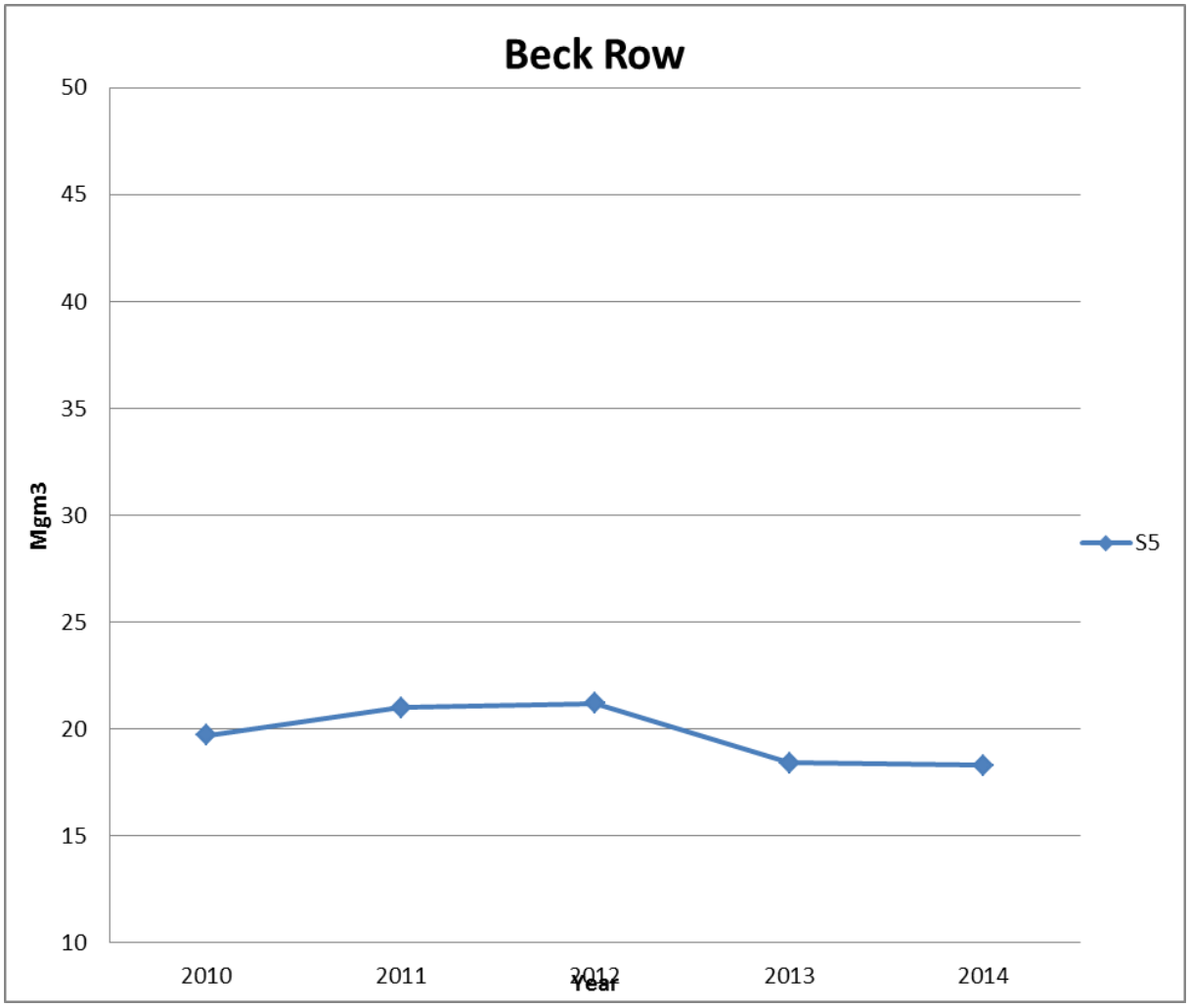
Only one slight exceedence of the national objective for nitrogen dioxide was reported in Forest Heath, which was in Newmarket within the AQMA by the taxi rank on the High Street, but monitoring indicates that the levels of nitrogen dioxide within the AQMA are generally falling.

Levels in Brandon through the town along London Road and the High Street continued to be slightly elevated, which can be attributed to congestion as a result of the frequent closure of the level crossing on the High Street/Mundford Road and higher than normal traffic levels through the town while construction on the major project on the A11 to dual it from the Fiveways Roundabout in Barton Mills to Thetford continued. This was completed in December 2014, and the traffic is now signposted to avoid travelling through Brandon, with the expectation that the air quality in the town will significantly improve. Detailed monitoring throughout 2015 will continue in order to assess whether any further action is required.

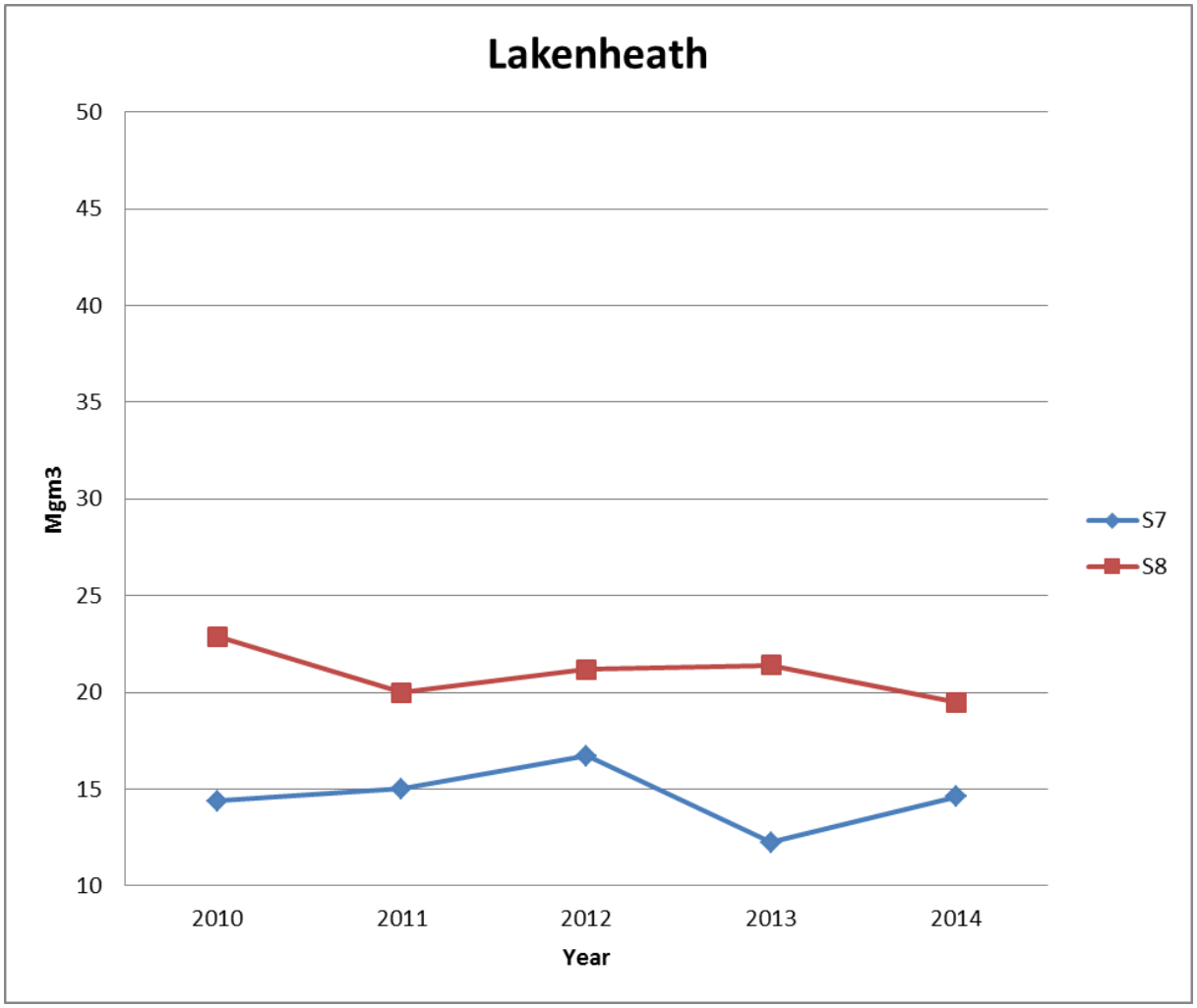
Figure 2.1: Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites



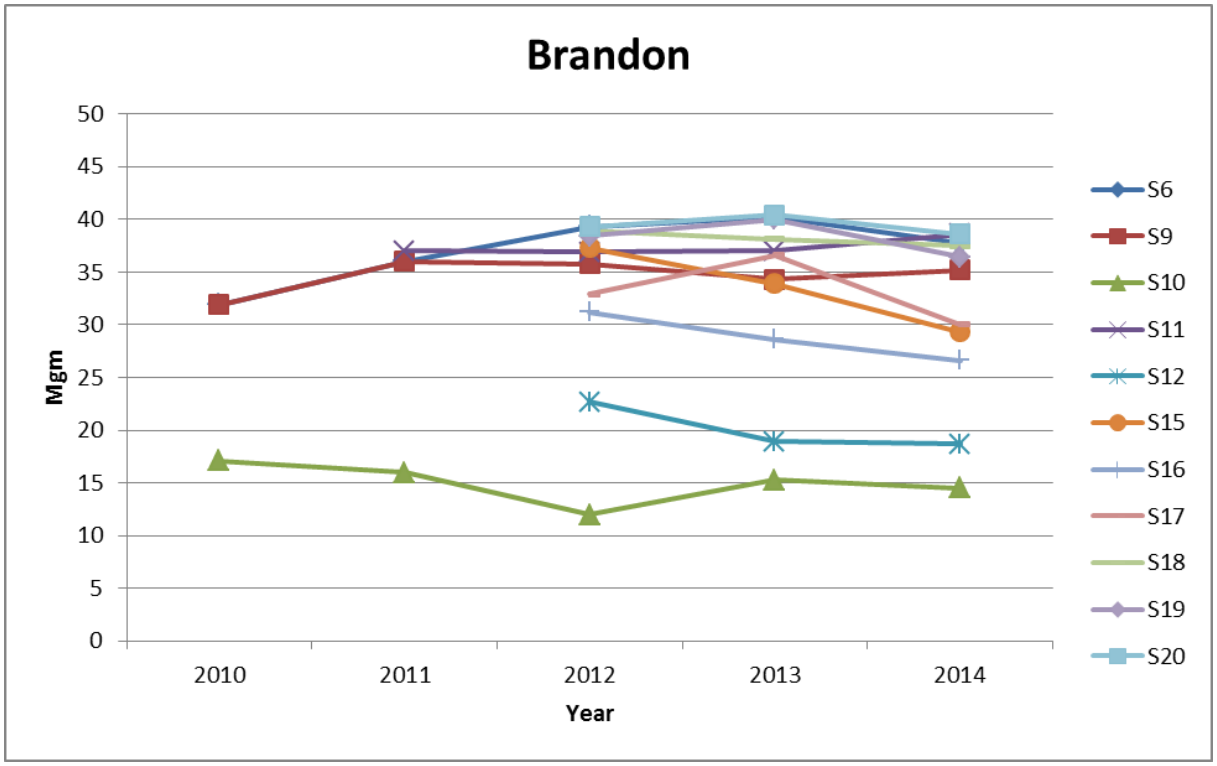
Levels within Mildenhall continue to remain relatively stable, with only a slight increase at the locations on the High Street and Field Road, which are two of the busiest roads in the town. However, levels are well below the natiional threshold for nitrogen dioxide, so no further action is required at this time.



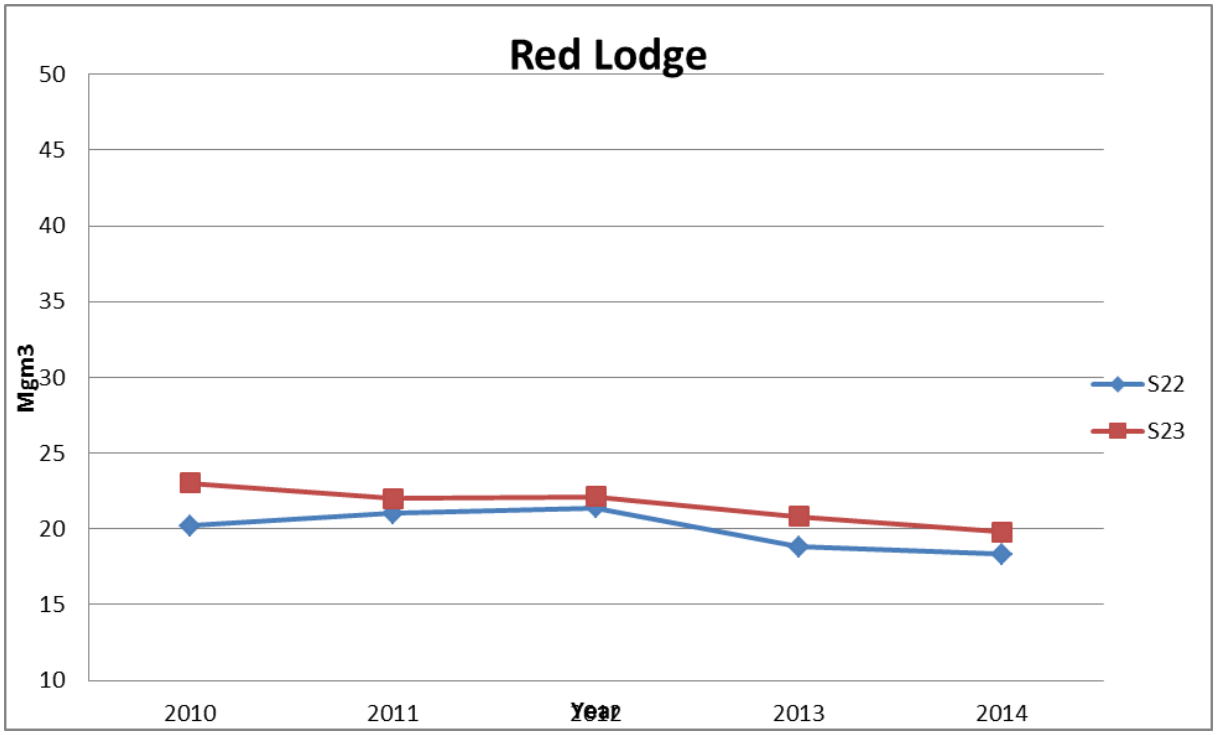
This monitoring location is within the close proximity of one of the main gates to RAF Mildenhall, opposite a substantial residential estate, but as the levels continue to decrease, no further action is required.



Levels remain relatively stable, well below the threshold, so no further action is required.



Levels along the main throughfare of the town continued to remain comparatively high whilst traffic avoided the construction of the dual carriageway on the A11 from the Fiveways Roundabout to Thetford by travelling through Brandon and the frequent closure of the level crossing on the High Street/Mundford Road due to faults attributed to a new system implemented by Network Rail and the actual number of trains travelling through Brandon on a daily basis. . It is anticipated that the monitoring from 2015 will show a significant decrease.



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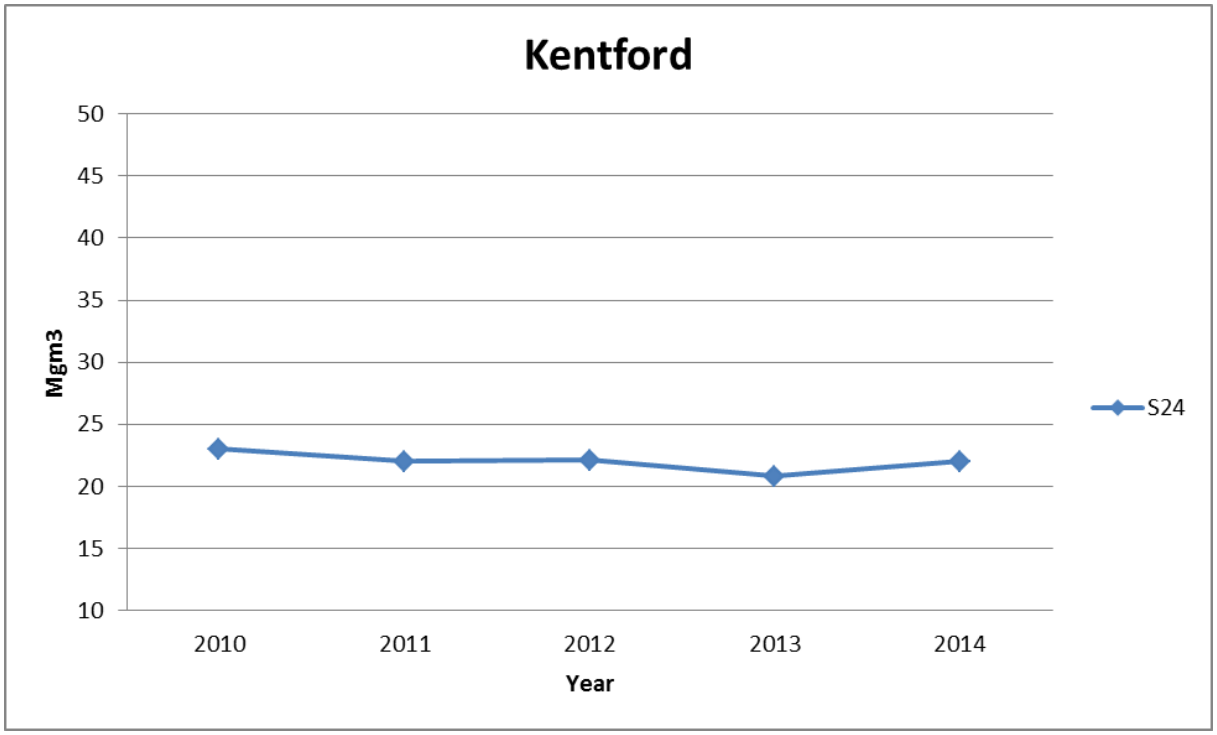

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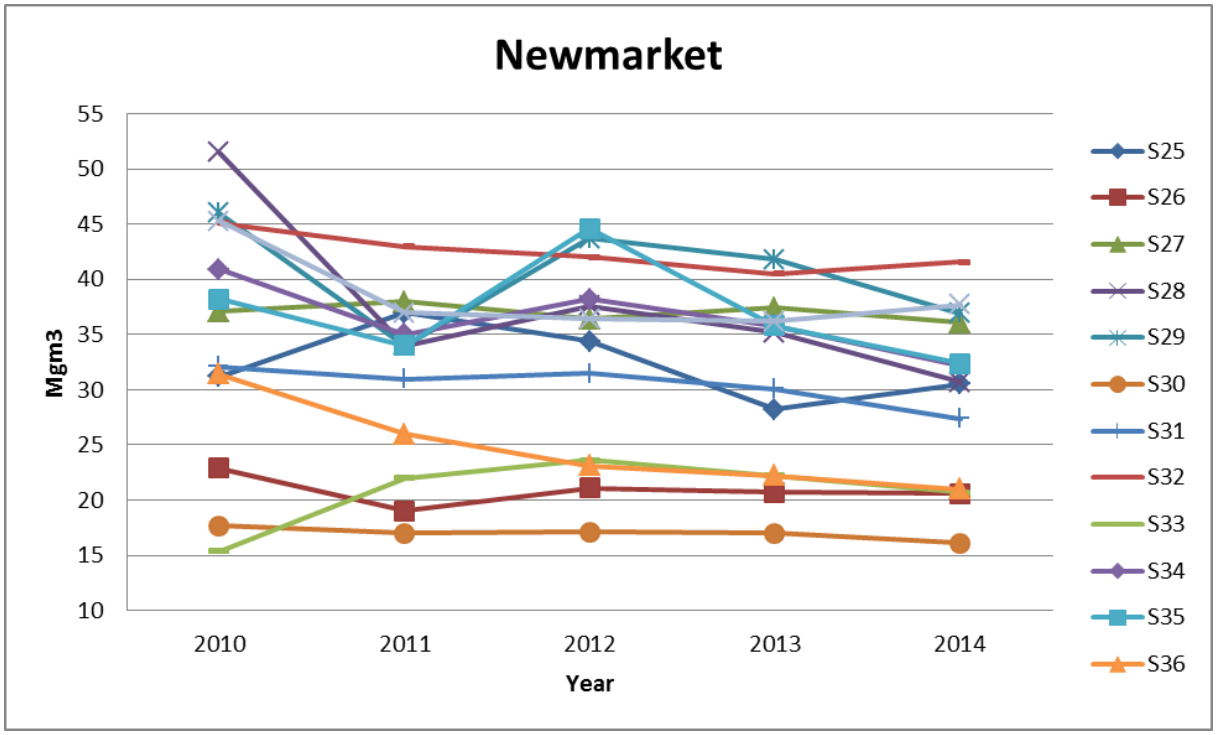
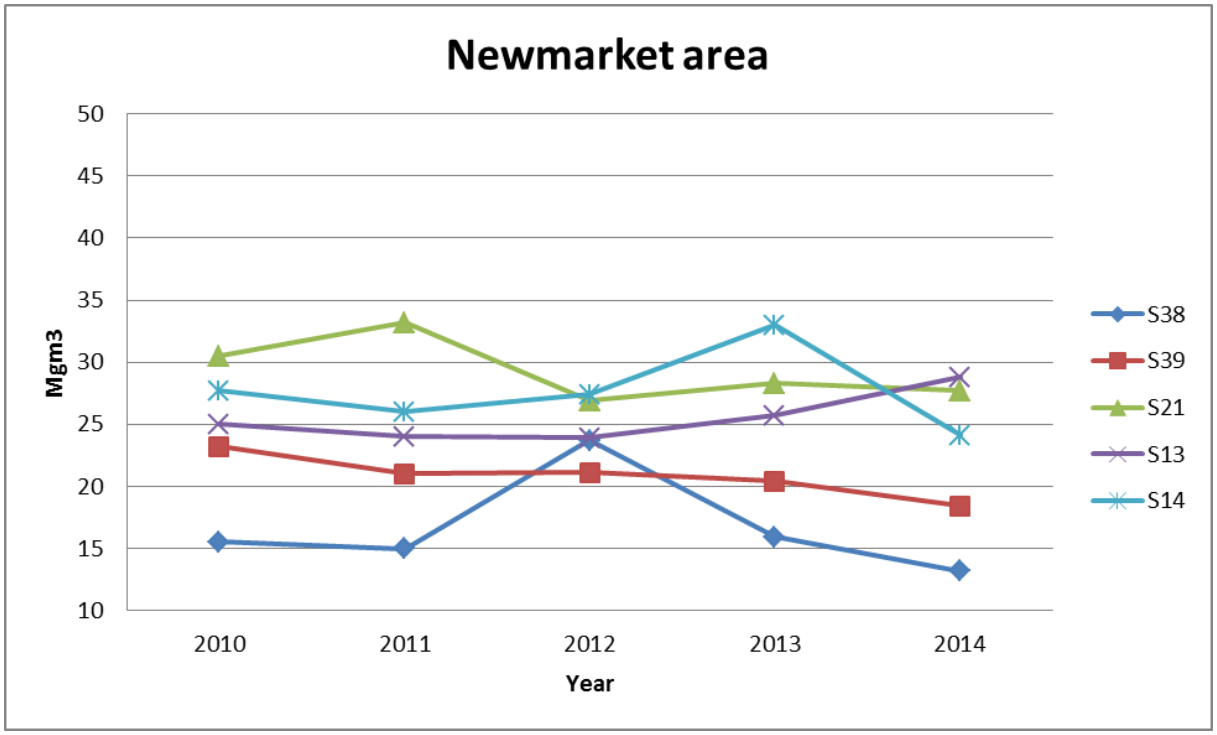


Levels within Newmarket are generally falling, although there was another slight exceedence by the taxi rank (S32) on the High Street within the AQMA. Thorough monitoring will continue and training is being offered to the taxi drivers in an attempt to improve their environmental awarness.

FHDC also continues to work on the Air Quality Action Plan focusing on the improvement of the air quality in Newmarket and works closely with the Transport & Highways Delivery Group of the Newmarket Vision Steering Group to improve traffic flow through the town and ultimately the air quality. Suffolk County Council, FHDC, the Jockey Club and other agencies are all represented on the group.



Levels remain relatively stable, well below the threshold, so no further action is required.

2.2.2 Other pollutants monitored

Forest Heath D.C. does not monitor for any other pollutant.

2.2.3 Summary of Compliance with AQS Objectives

Forest Heath D.C. has examined the results from monitoring in the district.

Concentrations within the AQMA still slightly exceed the objective for nitrogen dioxide at Newmarket and the AQMA should remain.

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 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Forest Heath D.C. 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.

Forest Heath D.C. 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.

Forest Heath D.C. confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Forest Heath D.C. confirms that there are no new/newly identified busy junctions/busy roads.

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

Prior to re-rerouting and dualling of the A11, exceedences of the air quality objective for nitrogen dioxide were previously measured in the village of Elveden. However, the realignment of the road now avoids the village and any relevant receptors. Therefore, it is anticipated that levels should now be below the air quality objective, which will be substantiated by monitoring in the village throughout 2015 and reported upon in the Progress Report for 2016.

Forest Heath D.C. has assessed the new road (dualled A11 opened in December 2014) meeting the criteria in Section A.5 of Box 5.3 in TG(09), and concluded that it will not be necessary to proceed to a Detailed Assessment.

3.6 Roads with Significantly Changed Traffic Flows

Forest heath D.C. confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Forest Heath D.C. confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Forest Heath D.C. confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Forest Heath D.C. 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.

Forest Heath D.C. 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)

Forest Heath D.C. 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

Forest Heath D.C. 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

Forest Heath D.C. 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

Forest Heath D.C. 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 Forest Heath area.

5.3 Petrol Stations

Forest Heath confirms that there are no petrol stations meeting the specified criteria in the technical guidance LAQM. TG(09).

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 is one poultry farm that is permitted for this activity by the Environment Agency in Forest Heath. The poultry units at the farm are mechanically ventilated but the number of birds does not exceed 400,000, and do not, therefore, meet the specified criteria.

Forest Heath D.C. confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Forest Heath D.C. confirms that there are no biomass combustion plant in the Local Authority area that will impact upon the local air quality.

6.2 Biomass Combustion – Combined Impacts

Forest Heath D.C. confirms that there are no biomass combustion plant in the Local Authority area, whose combined impacts would impact upon the local air quality.

6.3 Domestic Solid-Fuel Burning

Forest Heath D.C. confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Forest Heath D.C. 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

A slight exceedence of the annual mean for nitrogen dioxide in 2014, was found at the following location:

- Newmarket within the boundary of the AQMA.

However, the monitoring data for 2014 confirms that the general trend in the district is that levels of nitrogen dioxide are generally dropping below the national objective over time.

8.2 Conclusions from Assessment of Sources

There are currently no new approved local developments that will require more detailed consideration.
Work to implement the Air Quality Action Plan for Newmarket will continue, in conjunction with the objectives of the revised Local Air Quality Strategy. The Council aims to manage local air quality in order to discharge its statutory responsibilities arising from the National Air Quality Strategy and in doing so, improving local air quality to ensure air pollution remains below prescribed levels, thus maintaining the health and well-being of our residents. Local air quality is also dealt with through the planning system, where it may be a material consideration that requires an assessment to be made on the impact of the projected increase in road transport that will have on future air quality.

8.3 Proposed Actions

The monitoring for nitrogen dioxide throughout Forest Heath in 2014 has not identified the need to proceed to a Detailed Assessment, or any additional monitoring. The 2016 Progress Report will be submitted in due course.

9 References

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

DEFRA, 2009. P*art 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.

Appendix A: QA/QC Data

Diffusion Tube Bias Adjustment Factors

Concentrations of NO_2 are measured across FHDC using diffusion tubes. The tubes are currently prepared and analysed by Environmental Scientifics Group using the 50% TEA in acetone method.

The results of the analysis of the diffusion tubes for 2014 were bias adjusted using version 03/15 of the spreadsheet supplied by the Air Quality Review and Assessment Helpdesk The bias adjustment factor was taken to be the average from the co-location studies and a bias adjustment factor of 0.81 was calculated for the FHDC 2014 diffusion tube data.

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

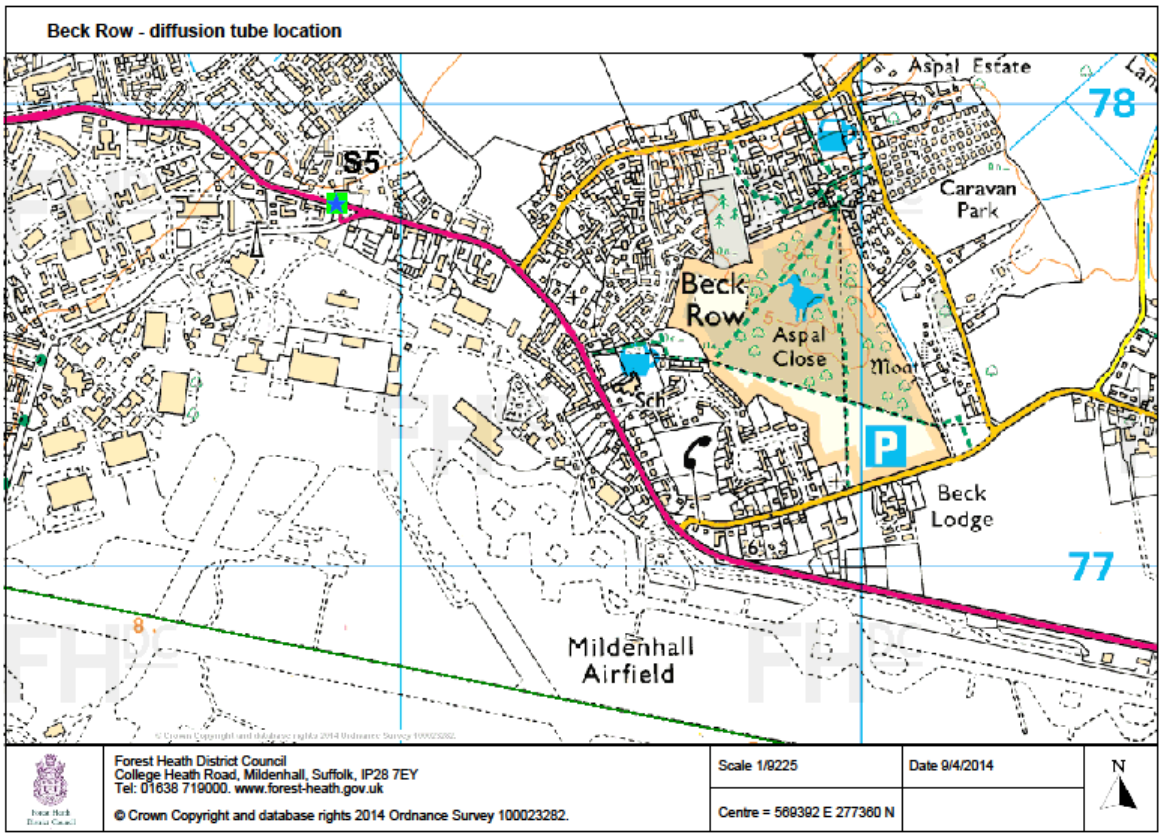
Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m^3)	Automatic Monitor Mean Conc. (Cm) (µg/m^3)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Cambridge City Council	12	47	37	25.5%	G	**0.80**
Dumfries and Galloway Council	12	35	30	16.5%	G	**0.86**
Falkirk	12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

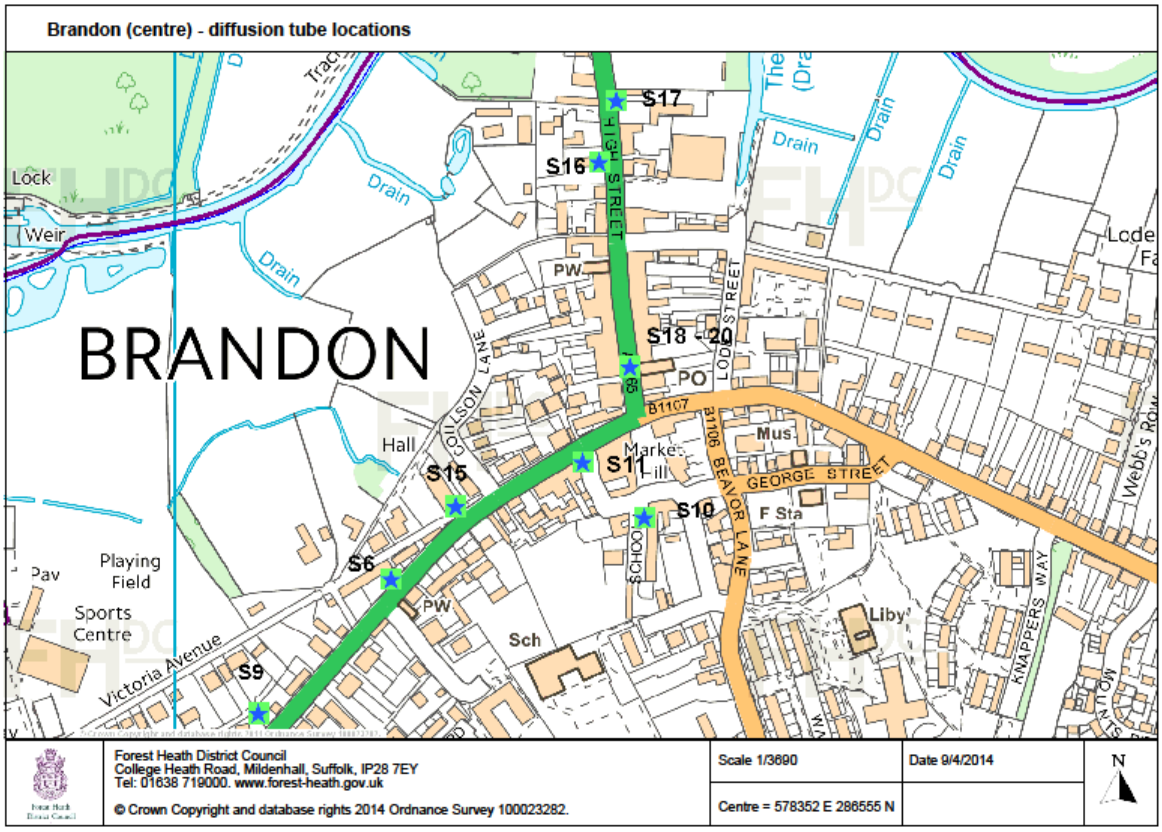
Appendix B: Consolidated results for 2014

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	A.M.	B.A.	%
S1	29.5	33.6	31.2	27.3		22.6	17.2	24		30.5	33.3	29.4	278.6	27.9	22.6	83
S2		24.1	21.1	17.8	16	13.5	14.2	16.6	23.8	19.2	40	24.6	230.9	21	17	92
S3	51.4		52.6	44.8	44.7	35.2	34.8	35.2		8.1	64.1	43.5	414.4	41.4	33.5	83
S4	37.9	31.8	29.6	25.6	22.6	13.8	19.4	19.4	27.1	31.3	34.1	31.4	324	27	21.9	100
S5	25.1	25.5	26.2	24.4	19	11.6	16.1	15.3	23.5	22.7	38	27.6	275	22.9	18.5	100
S6	43.6	54.5	53.8	49.3	46.6	30	46.8	41.1	53.7	41.8	44.1	55.2	560.5	46.7	37.8	100
S7	22.6	19	17.5	12.9	11.5	11.7	9.3	12	27.5	13.8	32.9	20.7	211.4	17.6	14.3	100
S8	33	25.3	26.6	27.5	23	16.4	21.5	19	14.1	22.7	31.8	23.4	284.3	23.7	19.2	100
S9	56.4	48.9	47.4	46.3	46.4	25.9	27.2	40.5	47.2	43.3	55.6	42.3	527.4	44	35.6	100
S10	17.2	18.6	20.1	17.4	12.1	10	11.7	10.9	18.7	15	26.4	24.3	202.4	16.9	13.7	100
S11	25.5	26.1	23.4	20.3	18.3	11.5	44.4	14	20.1	19.9	28.4	28.3	280.2	23.4	19	100
S12	42.8	48.4	66.5	45	48.9	29.4	13.7		57.8	47.8	48.8	52.1	501.2	45.6	36.9	92
S13		33.4	35.2			24.8	25.9	31.4	38.7	36.3	40.8	43.1	309.6	34.4	27.9	75
S14	25.1	28.1	38	29.9	31.3	22.4	22.1	21.8	35.9	19.8	31.4	30.1	335.9	28	22.7	100
S15	37.4	38.4	40.1	37.3	30.8	26.1	23.8		36.2	35.9	41.1	38.1	385.2	35	28.4	92
S16	29.8		33.2	33.9	33	30.4	35.6		34.8	34.9	39.2	32.9	337.7	33.8	27.4	83
S17	43.3	38.5	44.4	51	45.8	42.9	39.7	34.9	55.8	36.2	6		438.5	39.9	32.3	92
S18	58.1	50.6	57.4	48.6	47.4	42.5	37	41.6	53.6	43.1	57.6	41.1	578.6	48.2	39	100
S19	52.1	50.3	54.8	51.6	46	37.3	42.7	41.3	50.8	36.7	59.2	38.6	561.4	46.8	37.9	100
S20	59.8		49.2	49.8	51.3	37	36.5	43.5	55.8	43.6	57.6	39.3	523.4	47.6	38.6	92
S21	27.9	36.3	36.6	35.9	36	20.4	26.9	31.5	30.3	36.2	38.4	39.1	395.5	33	26.7	100
S22	26.6	25.1	24.6	17.6	16.3	11.7	9.3	17	22.7	19.3	23.6	27.6	241.4	20.1	16.3	100
S23	21.7	27.1	27.5	23	16.8	12.5	13.5	16.3		21.6	28.7	33.5	242.2	22	17.8	92
S24	17	28	31.3	28.4	23.1	17.1	20.1	23.2	30.4	26.7	29.9	22.4	297.6	24.8	20	100
S25				42.8	36.5	30	36.9	43	42.7	40.7		54.8	327.4	40.9	33.1	67
S26	26.1	25.6	30.9	24.1	20.8	16.6	20.5	21	27.4	20.2	28	30.6	291.8	24.3	19.7	100
S27	45.3	46.1	44.1	47.5	41.6	30.2	39.1	35.6	53.4	48.4	47	43.8	522.1	43.5	35.2	100
S28	38.3	37.2	44.1	40.5	34.1	32.5	41	33.5	49.3	33.5	43.4	50.5	477.9	39.8	32.2	100
S29		46.8	50.7	49.6	40.5		48.4	37.6	54.6	43.8	50.2	54.3	476.5	47.7	38.6	83
S30	25.2	21.1	21.7	16.5	12.9	9.9	10.6	13.9	20.9	17.6		24.6	194.9	17.7	14.3	92
S31	35.4	31	40.9	37.7	31.6	28.4	32.9	32.5	46.4	31	40.7	30.9	419.4	35	28.3	100
S32		54.6	60.3	49.1	53.3		51.8	45.8	57.6	41.9	46.9	68.5	529.8	53	42.9	83
S33	33.7	29.9	29.7	24.5	21.7	16.4	18.2	22.7	27.6	23.9	32.9	32.3	313.5	26.1	21.1	100
S34	43.1	45.2	49	44.2	39.4	26.4	28.1	39.7	44.3	34.7	38.2	53.3	485.6	40.5	32.8	100
S35	40.6	41.7	48.4	43.9	38.9	26.8	35	40.3	49.8	52	46.1	48.6	512.1	42.7	34.6	100
S36	26.3	28.6	29.5	28	23.9	18.7	19.2	21.7	31.9	24.1	34.3	29.8	316	26.3	21.3	100
S37	47.1	52.6	54		40.9	29.9	34.6	34.9	47.8	54.5	54.4	54.7	505.4	45.9	37.1	92
S38	19.8	16.6	18.9	17.6	12.6	9.4	10.4	12.3		14.5	25.5	20.3	177.9	16.2	13.1	92
S39	25.6	24.8	26.5	18.8	18.7	13.2	18.3	16.9	27.7	15.9	34.9	22.9	264.2	22	17.8	100

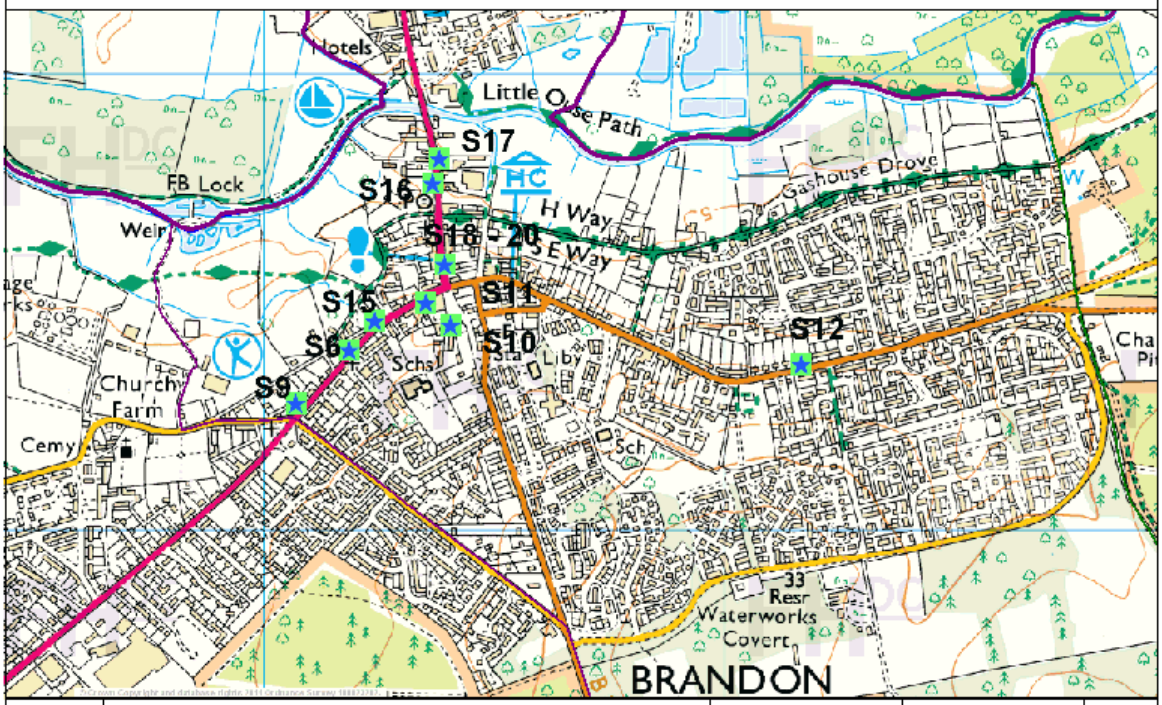
Note – blank columns indicate missing tubes

Appendix C: Diffusion tube monitoring sites





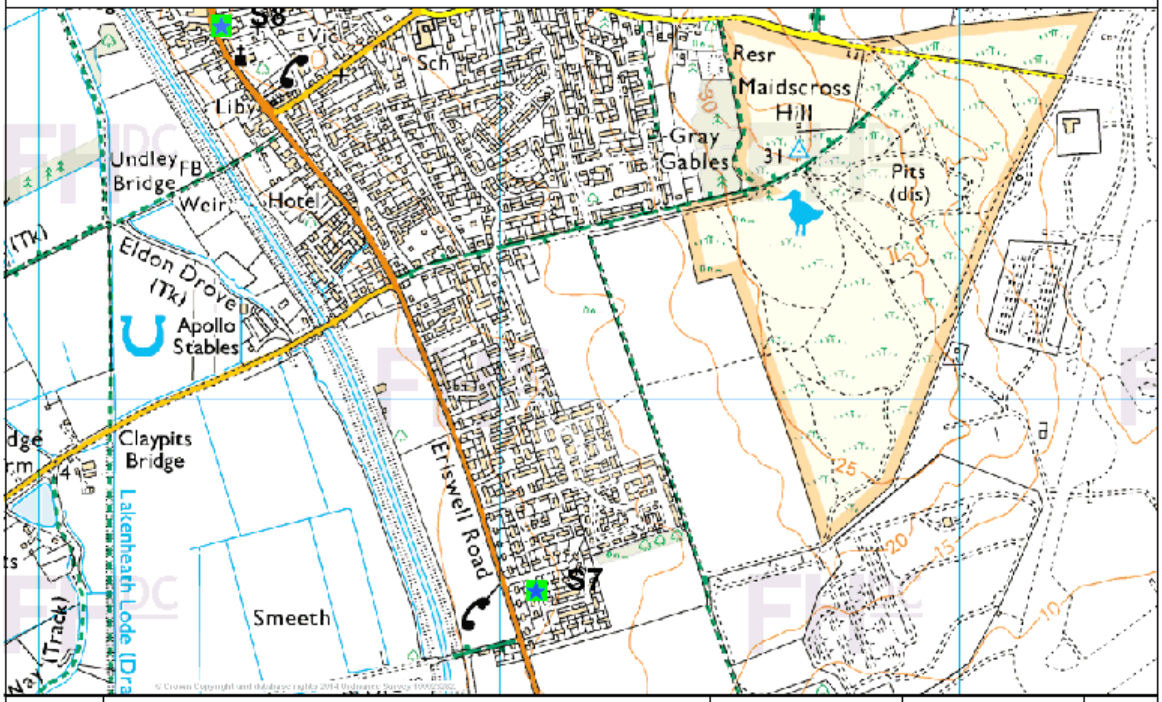
Brandon - diffusion tube location



Forest Heath District Council
College Heath Road, Mildenhall, Suffolk, IP28 7EY
Tel: 01638 719000. www.forest-heath.gov.uk

Scale 1/9225 | Date 9/4/2014 | Centre = 578689 E 286385 N | N

Lakenheath - diffusion tube location



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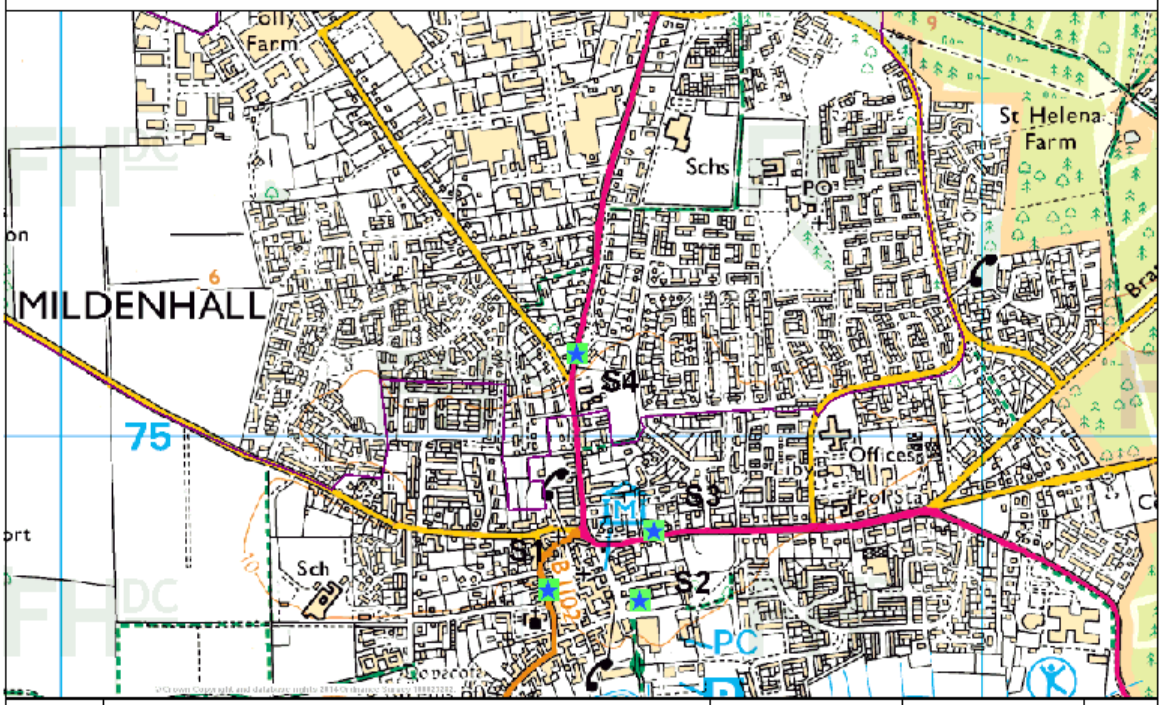
Tel: 01638 719000. www.forest-heath.gov.uk

Scale 1/9225 | Date 9/4/2014 | Centre = 572178 E 282104 N | N

Mildenhall - diffusion tube location



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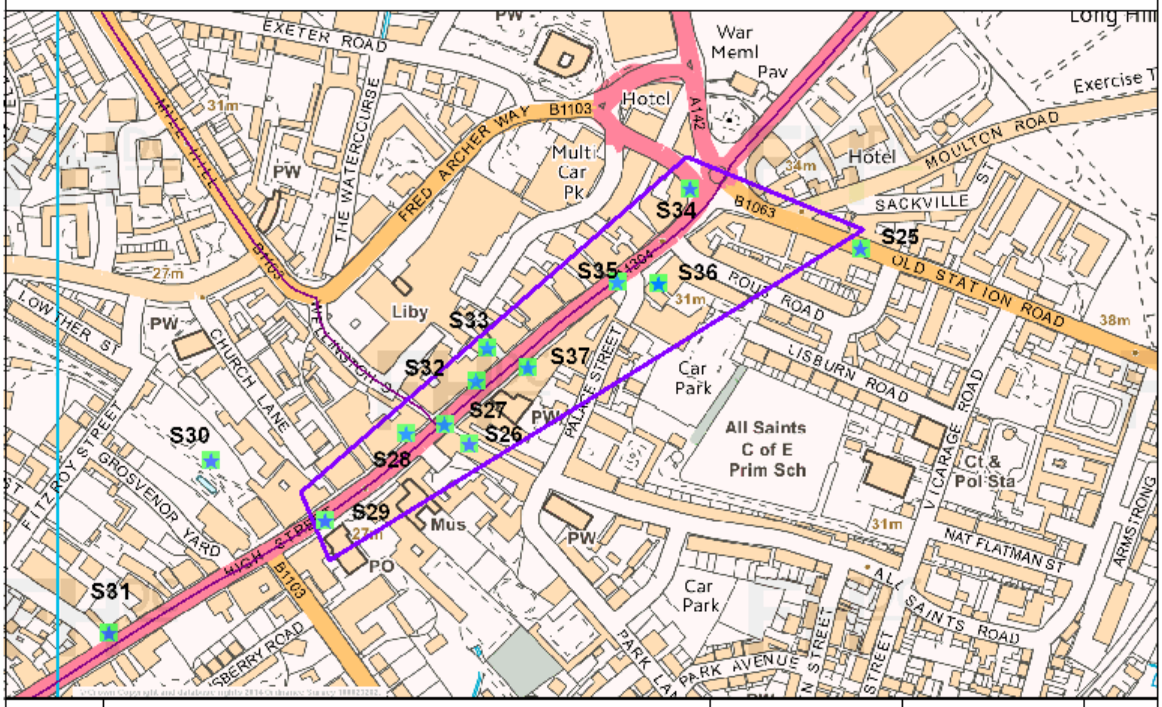
Scale 1/9225 | Date 9/4/2014 | Centre = 571129 E 275177 N | N

Newmarket (centre) - diffusion tube locations and AQMA boundary



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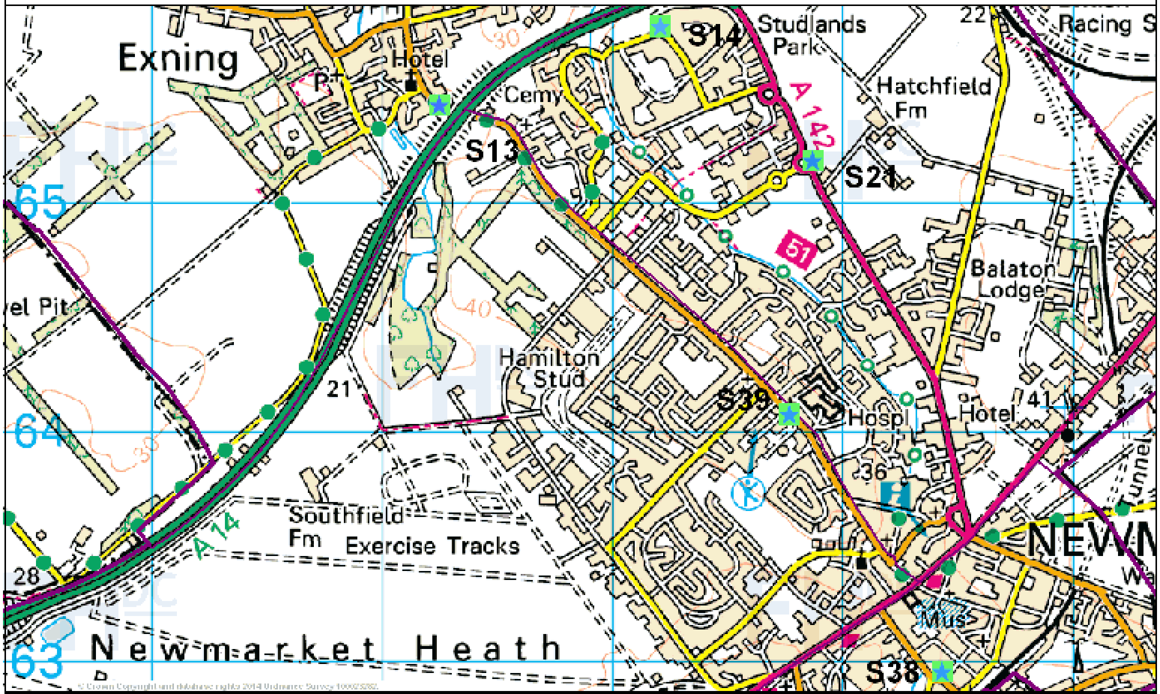
Scale 1/3690 | Date 9/4/2014 | Centre = 564454 E 263408 N | N

Newmarket area - diffusion tubes location



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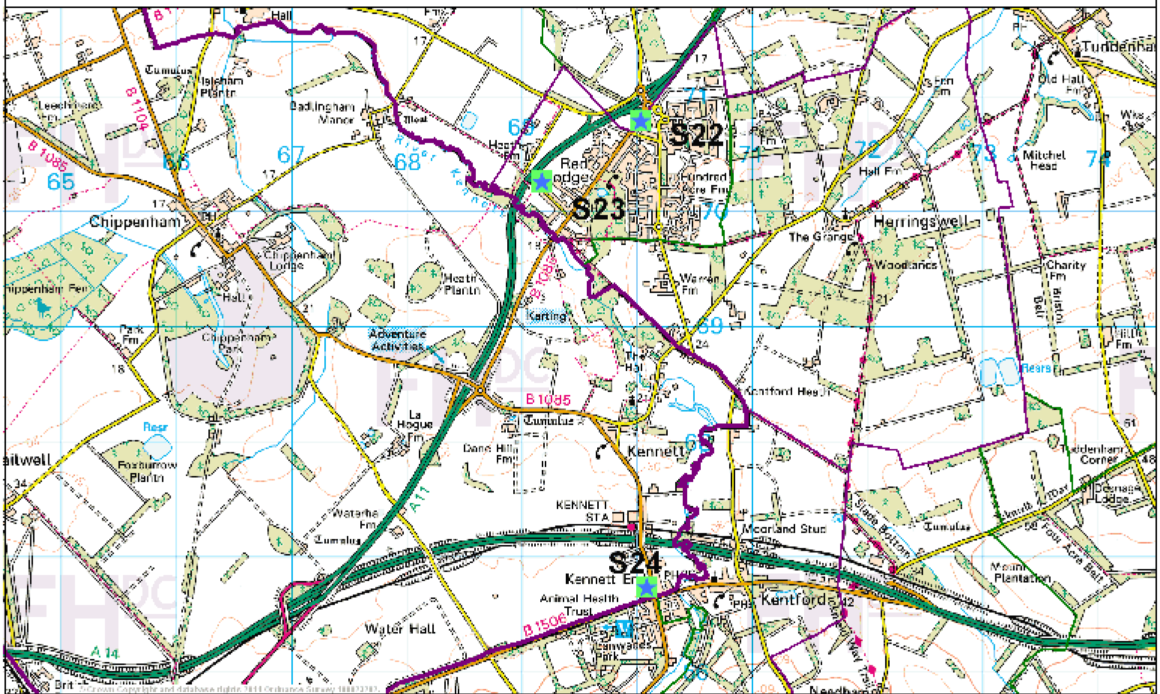
Red Lodge & Kentford - diffusion tube locations



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