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2010 Air Quality Progress Report for Suffolk Coastal District Council

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

(July, 2010)

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Executive Summary

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

Previous rounds of review and assessment for the district have culminated in the declaration of two AQMAs. The first was declared in 2006 and encompasses several properties on the junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge (Woodbridge Junction). The second was declared more recently, in 2009, for The Dooley Inn, Ferry Lane, Felixstowe. This is a single property close to the Port of Felixstowe.

The finalised Action Plan for the Woodbridge Junction will be produced and sent to Defra within the next 2 months and work is continuing on the draft Action Plan for the AQMA at The Dooley Inn, Felixstowe.

This Progress Report has not identified the need to proceed to a Detailed Assessment for any pollutant.

Work undertaken has identified 21 sites that have biomass plant with a thermal output greater than 50Kw within the district. Insufficient information is available to allow us to undertake screening assessments for each installation, but we are currently pursuing this data. Progress on, and results of, the screening assessments will be detailed in the next annual air quality report (Progress Report) due for production in April 2011.

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1 Introduction

1.1 Description of Local Authority Area

Suffolk Coastal is a diverse district incorporating thirty miles of coast, expansive areas of countryside, much of which still forms a working landscape, five market towns including Woodbridge, the resort and port of Felixstowe as well as many villages. The district supports over 4,000 businesses, including large employers like the Port of Felixstowe, BT and Sizewell Power Station, as well as a high proportion of small and medium sized businesses that are vital to the local economy. Tourism is also a major driver for the local economy. Much of the district is within the Haven Gateway that is identified for significant growth.

The main source of emissions, within the majority of the district, is road traffic. Within the town of Felixstowe, emissions from and associated with the Port of Felixstowe are a large source of pollutants. While the quality of our air is generally very good and well within the limits set by Government for the protection of human health, there are now two areas within the district where levels of pollution give rise for concern. As such, two Air Quality Management Areas have been declared in the District, one in Woodbridge (road traffic related) and the other in Felixstowe (associated with emissions from and associated with the Port of Felixstowe).

1.2 Purpose of Progress Report

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

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

1.3 Air Quality Objectives

The air quality objectives applicable to 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. This table shows the objectives in units of micrograms per cubic metre $\mu g/m^3$ (for carbon monoxide the units used are milligrammes per cubic metre, mg/m^3). Table 1.1. includes the number of permitted exceedences in any given year (where applicable).

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

1.4 Summary of Previous Review and Assessments

The first round of review and assessment

This was completed in 2001 and consisted of three stages. The findings of the first round were that the air quality objectives for all seven pollutants would be met within the Suffolk Coastal district and no AQMAs were declared.

The second round of review and assessment

This was completed in 2005, the format of which followed updated guidance. An Updating and Screening Assessment was published in 2003, Detailed Assessments in 2004 and 2005 and a Progress Report in 2005.

The findings of the second round were that the air quality objectives for benzene, lead, 1,3-butadiene, and carbon monoxide would be met within the Suffolk Coastal district and no further assessment was necessary.

A **Detailed Assessment** monitoring study at locations on the A1214 close to the junction with Bell Lane at Kesgrave showed that it was unlikely that the air quality objective for nitrogen dioxide would be exceeded where there was relevant exposure of members of the public and declaration of an Air Quality Management Area was not necessary.

For nitrogen dioxide, sulphur dioxide and particulate matter the second round of review and assessment concluded that there was a potential risk of the air quality objectives being exceeded. Further investigation was required to assess emissions of nitrogen dioxide from traffic using the junction of Lime Kiln Quay Road, Thoroughfare, and St. John's Street in Woodbridge (Woodbridge Junction), and emissions of nitrogen dioxide, sulphur dioxide and particulate matter from activities on and associated with the Port of Felixstowe.

An additional **Detailed Assessment** report was produced for the Woodbridge Junction in September 2005. This concluded, from further monitoring and modelling, that the annual mean NO_2 objective was likely to be exceeded in 2005 for two properties at Melton Hill, Woodbridge. On 3 March 2006 an **Air Quality Management Area** Order was made by Suffolk Coastal District Council for the Woodbridge Junction, this came into effect on 3 April 2006. The designated area incorporates properties on the Western side of the Thoroughfare and Melton Hill arm of the junction with Lime Kiln Quay Road, in Woodbridge, Suffolk. A map showing the AQMA boundary can be seen in Figure 1.1a at the end of this section, and a copy of the AQMA Order is included as Appendix A.

A **Further Assessment** was produced for the Woodbridge Junction in October 2007 and a draft **Air Quality Action Plan** has been accepted by Defra and is currently undergoing a period of Public Consultation.

The third round of review and assessment

The **Updating and Screening Assessment** report (September 2006) determined that further investigation in the form of Detailed Assessment monitoring and computer modelling was required to investigate emissions of nitrogen dioxide, sulphur dioxide and particulate matter from activities on and associated with the Port of Felixstowe, including future predictions for 2010 with the Felixstowe South Reconfiguration on-line:

The **Detailed Assessment** report for Felixstowe was produced in May 2008 and concluded the following:

- Modelled **sulphur dioxide** concentrations were less than the air quality objectives for all locations outside the port boundary for all modelled scenarios. The scenarios modelled include the current situation and future years with the Felixstowe South and Bathside Bay developments. Measured concentrations at the nearest residential location to the port (Adastral Close) confirm the results of the modelling study. It was not recommended that Suffolk Coastal District Council declare an Air Quality Management Area for sulphur dioxide.
- Measurements indicated that the annual mean objective for **nitrogen dioxide** was exceeded at the Dooley Inn. The modelling study indicated that this is currently the only relevant receptor location at which the objective is not met. The modelling study indicated that there is a risk that the objective for nitrogen dioxide will not be met at approximately fifteen additional properties at the west end of Adastral Close in 2010 and beyond following the Felixstowe South Reconfiguration. Source apportionment studies indicated that container handling operations by rubber tyred gantry (RTG) crane and internal movement vehicles will potentially make the largest contribution to oxides of nitrogen concentrations both at Adastral Close and at the Dooley Inn in 2010. The Port of Felixstowe Environmental Statement 2006 recognises the need to reduce emissions from the RTGs and the Port has set up a joint initiative between the engineering and operations departments to identify electricity supply points, which will enable the RTGs to be switched off when idle, reducing both fuel consumption and overall emissions. The modelling studies indicate that reducing RTG emissions has the potential to reduce concentrations sufficiently that the air quality objective could be met both at Adastral Close and at the Dooley Inn.
  It was recommended that Suffolk Coastal District Council declare an Air Quality Management Area for the annual mean nitrogen dioxide objective to cover the Dooley Inn. It was further recommended that the Council encourage the Port to make progress in identifying electricity supply points for the RTGs.
- Measurements undertaken at Adastral Close indicate that Suffolk Coastal District Council is not required to declare an Air Quality Management Area for **PM_{10}**. Dispersion modelling of the emissions from ships, roads and container handling operations at the port indicates that members of the public are not currently subject to relevant exposure to concentrations in excess of the objective. Port emissions may increase with the Felixstowe South Reconfiguration but it is predicted that the air quality objective for PM_{10} will continue to be met.

On 1 May 2009 an **Air Quality Management Area** (AQMA) Order was made for the Dooley Inn, Ferry Lane, Felixstowe with regard to the annual mean nitrogen dioxide concentration. A map showing the AQMA boundary can be seen in Figure 1.1b below, and a copy of the AQMA Order is included as Appendix B.

A **Further Assessment** has recently been produced for the AQMA and is with Defra awaiting approval. Work is continuing on the **Action Plan** options for this site.

The **Progress Report** produced in May 2008 provided an update regarding air quality within the district.

The fourth round of review and assessment

The **Updating and Screening Assessment** report (August 2009) did not identify the need to proceed to a Detailed Assessment for any pollutant. It advised that work is continuing in order to identify biomass combustion plant within the district in order to undertake a screening assessment.

Figure 1.1a Map showing the boundary of the AQMA declared at the junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge.

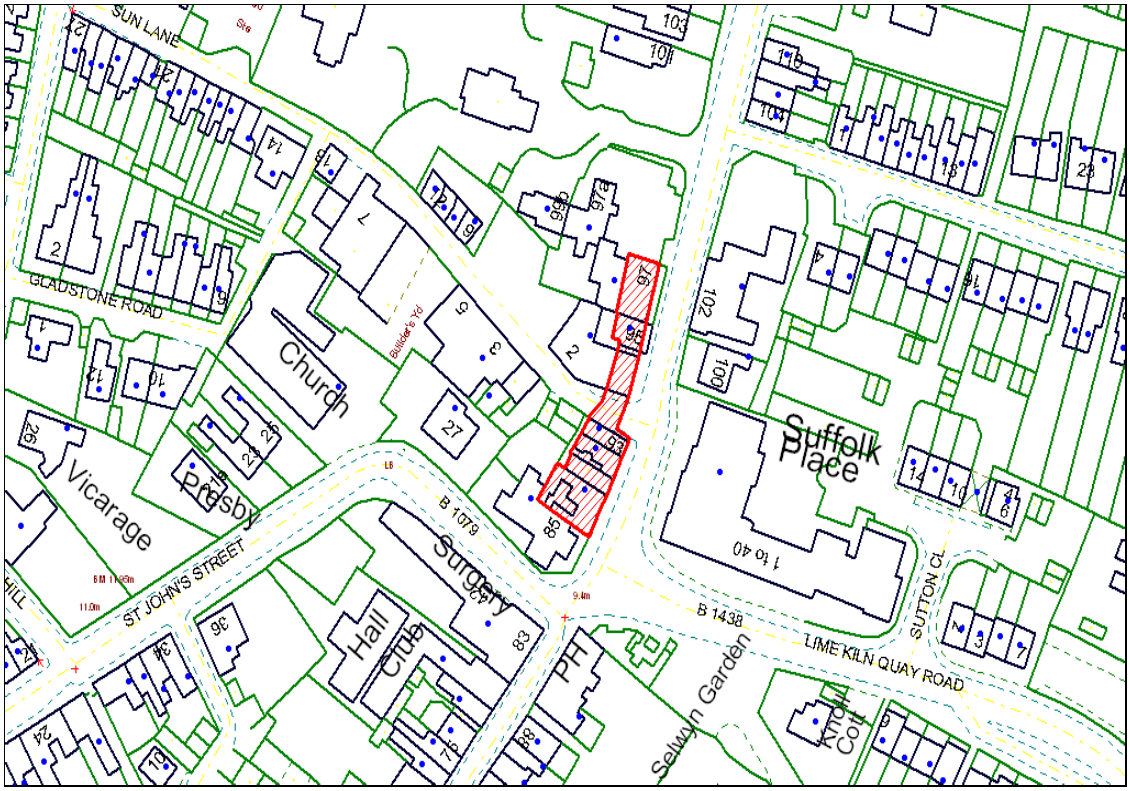
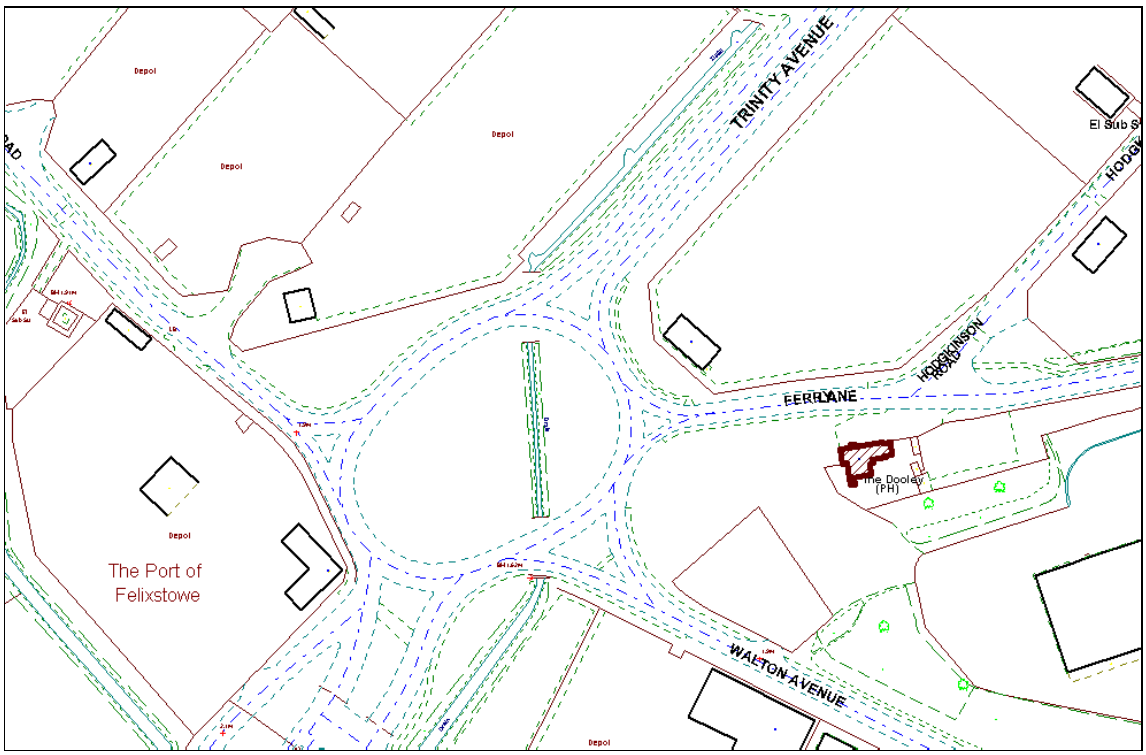


Figure 1.1b Map showing the boundary of the AQMA declared at The Dooley Inn, Ferry Lane, Felixstowe.



1.5 Findings of Recent Air Quality Consultations

All Local Authorities must consult on the findings of their periodic reviews of air quality, as laid out in Schedule 11 of the Environment Act 1995. This enables local views to be taken into consideration within the review and assessment process, which is of great importance as Local Air Quality Management (LAQM) is about air quality issues relevant to the Suffolk Coastal district.

Since the Updating and Screening Assessment Report (2009), there have been two public Consultations undertaken simultaneously. The first consulted on the findings of the afore-mentioned Updating and Screening Assessment Report (August 2009). The second consulted on the draft Action Plan for the Woodbridge Junction (August 2009).

A total of 20 responses were received, 4 relating to the Updating and Screening Assessment Report Consultation, and 20 relating to the draft Action Plan Consultation (please note that two of the responses covered both reports which is why the figures do not add to the total).

Consultation responses received relating to the draft Action Plan for the Woodbridge Junction have been added to those previously received for this junction and will be included and discussed within the finalised Action Plan, to be produced within the next few months. The 4 responses received relating to the Updating and Screening Assessment 2009 are discussed below.

Of the 4 responses received, 2 were specific to air quality at the crossroads of the A1152 and B1438 at Melton (Melton crossroads) and two covered a range of points, also including the Melton crossroads. Each of the topic areas are expanded upon below:

- **Melton crossroads** – the responses requested information regarding monitoring results, suggested possible additional future monitoring locations and asked whether the traffic lights should be temporarily removed as a trial and replaced by an 'enter in turn' junction with pedestrian crossings.

  With regard to monitoring at this junction, this has been undertaken at the junction for a number of years, including more recently at the primary school. The locations of the monitoring sites were chosen as those experiencing the highest levels of pollutants, following results from a detailed computer modelling study which predicted concentrations at all houses along the 4 arms of the junction. The pollutant which has been measured is nitrogen dioxide (NO_2) which arises from vehicle emissions at the junction. The air quality standard set by the Government for NO_2 is 40µg/m^3 and the highest readings we have had at the junction for 2007, 2008 and 2009 are 33, 28 and 24µg/m^3 respectively. This shows a downward trend which may be related to alteration of the junction layout and traffic signalling, which occurred a number of years ago, and has allowed traffic using the junction to flow more effectively. As the monitoring results are well below the air quality standards the Council does not have the power to effect any further junction alterations relating to the removal of traffic lights as suggested above. The Council will continue to monitor levels of NO_2 at the junction to keep informed, should the levels begin to rise close to or above the air quality standards action would be taken.

- **Emissions from shipping at Felixstowe and along the estuary** – concerns were raised regarding smog and oily smells coming from ships using the Port of Felixstowe via the Orwell estuary and affecting Parishes on the peninsula.

  Detailed monitoring and modelling of emissions from the Port of Felixstowe, including shipping, has been undertaken for pollutants covered under the Local Air Quality Management regime. These investigations determined that the only area where the objectives are exceeded is the Dooley Inn Public House, Ferry Lane, Felixstowe. This location is in close proximity to the Port of Felixstowe boundary and the heavily trafficked Dock Gate 2 roundabout, emissions from which are causing exceedances of the nitrogen dioxide annual mean objective. There was one other location where the nitrogen dioxide annual mean is close to the objectives and requires continued monitoring - Adastral Close. This location is again in close proximity to the Port of Felixstowe boundary. All other areas modelled in Felixstowe and the Trimleys do not exceed the objectives. Due to the distances involved, emissions from the Port of Felixstowe are very unlikely to cause exceedances of the Air Quality Objectives along the estuary and within the peninsula parishes and, as such, we will not be undertaking any monitoring at this time. A Further Assessment has recently been undertaken for the Air Quality Management Area in Felixstowe which re-models the emissions. This report is currently awaiting Defra approval and will be available for public consultation at a later date.

  The suggestions provided relating to emissions reduction at the Port of Felixstowe are most gratefully received and will be put forward as part of the Action Plan production for this area.

- **Additional monitoring locations in Kesgrave** – concerns were raised regarding rush hour vehicle emissions on the stretch of Main Road Kesgrave from St. Olaves Road, across the Rope Walk roundabout and up to the Bell Lane traffic lights. It was

suggested that a monitoring location be positioned on the Woodbridge side of the Rope Walk roundabout to check levels.

Levels of nitrogen dioxide from vehicle exhausts have historically been monitored at a number of locations along Main Road in Kesgrave, including the area suggested. This monitoring was undertaken in 2001 and confirmed levels to be 24µg/m^3 at a roadside lamppost situated outside 139 Main Road (the air quality standard is 40µg/m^3). The same year, monitoring confirmed that the only area where concentrations were close to the objectives, showing 32µg/m^3, was on Main Road on the Ipswich side of the Ropes Walk roundabout before the Bell Lane traffic lights where traffic is congested. In 2009 the results at this site were 33µg/m^3 and monitoring continues to be undertaken at this location, but all other locations have been removed. Should we obtain any indications from our monitoring that emissions are rising we will add extra sites to our study.

- **Monitoring emissions from traffic using the A12** – it has been suggested that monitoring could be undertaken along the A12, on the approach to the Park & Ride roundabout from the Woodbridge direction, where traffic queues at peak times.

  During each Updating and Screening Assessment all major roads within the district are screened for areas where the objectives could be exceeded. Receptor locations close to all roundabouts on the A12 have been screened, and particular attention was paid to the Park & Ride roundabout both before and after the implementation of the Park & Ride. Although traffic does queue at peak times on this stretch of the A12, the receptors are situated at a distance from the kerbside whereby emissions would be sufficiently dispersed to not cause any exceedances of the objectives. Monitoring will, therefore, not be undertaken in this location at this time. Should circumstances change we will review the situation.

- **Emissions from the proposed Adastral Park development** – concerns were raised regarding emissions from the proposed Adastral Park development. The Environmental Statement submitted as part of the planning application (C09/0555) for this site included an air quality assessment which is currently being assessed by us and this application is discussed in more detail in Chapter 5 of this report. A new monitoring site has been located on the A12 near to the BT roundabout where the Adastral Park site is planned and receptor locations are closer to the kerbside to monitor nitrogen dioxide due to emissions from vehicle exhausts. This site will provide us with information regarding current concentrations of nitrogen dioxide and any changes which ay occur should the planning application go ahead in the future.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

In 2009 two automatic analysers measuring oxides of nitrogen remained within the Suffolk Coastal district in the following locations, both now declared as Air Quality Management Areas:

- Junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge (Woodbridge Junction)
- The Dooley Inn Public House, Ferry Lane, Felixstowe

Further detail regarding each site is provided in Table 2.1 below. The location of each analyser is shown on the maps in Figures 2.1a and 2.2b on the following pages. Details of Quality Assurance/ Quality Control carried out for each of the analysers is provided in Appendix C.

The data obtained at each site has been used to provide a bias correction factor for collocated diffusion tubes at each location.

At the end of March 2010 the continuous analyser situated at The Dooley Inn Public House, Ferry Lane, Felixstowe had to be removed from the site as the pub was vacated and boarded up and thus the electricity supply was switched off. The building has recently been sold and we are informed that it will continue to be used as a Public House. The new owners have recently taken possession of the premises and given their approval to re-install the monitoring equipment.

Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref		Pollutants Monitored	Monitoring Technique	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 ?
Woodbridge Junction	Kerbside	X 62759	Y 24926	Nitrogen dioxide (NO_2)	ozone chemi.-luminescence	Y	Yes (0.1m)	1m	Y
Ferry Lane, Felixstowe	Industrial / Road traffic	X 62796	Y 23423	Nitrogen dioxide (NO_2)	ozone chemi-luminescence	Y	Yes (0.1m)	12m to local road 72m to main road of concern	Y

2.1.2 Non-Automatic Monitoring

During 2009 there were 2 additional sites monitoring concentrations of NO_2 using passive diffusion tubes in the Suffolk Coastal district, bringing the total to 41. Further details regarding these sites are provided in Table 2.2 overleaf. The 2 new sites include an additional location at the Woodbridge junction (Woodbridge 23) and a new site at Martlesham near to the A12 (Martlesham 1)

The Woodbridge site is located in St. John's Street near to the traffic lights at the junction (not within the AQMA itself), where a row of new houses has been built to replace a doctors surgery. The location of this site can be seen on the map in Figure 2.1a and also in Appendix D. The houses are within 2m of the kerbside and levels of NO_2 at this location will be identified.

The Martlesham site is close to the A12 at the roundabout with the BT laboratories, the location of the site can be seen on the maps provided in Appendix D. Adjacent to this location a revised outline planning application for the redevelopment of Adastral Park was submitted on 9 April 2009. The application includes the creation of an Innovation Park with linked university provision, new community facilities, significant changes to the local road network, and a major housing development of 2,000 houses, further detail is provided in Chapter 5 of this report. The diffusion tube site was put in place from May 2009 in order to provide us with current information regarding levels of NO_2 at the closest receptor locations to the A12 at the main point of access onto the BT site, so that any changes in the future can be assessed.

Information regarding the analyst laboratory used, Quality Assurance/ Quality Control and bias correction factors are provided in Appendix C. Maps showing the diffusion tube sites are provided in Appendix D.

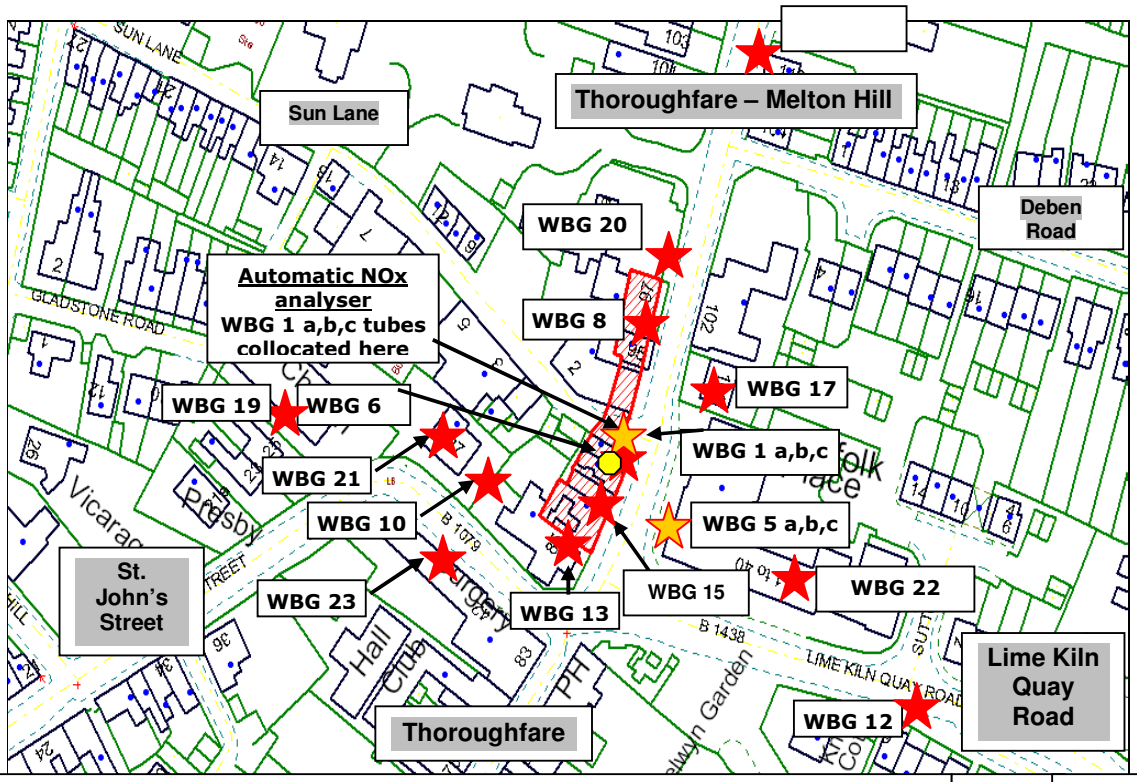
Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	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)*	Worst-case Location?
Felixstowe 4 (FLX 4)	Urban background	(6)3080 (2)3542	NO_2	N	Y 11m	N/A	N/A
Felixstowe 12 (FLX 12)	Roadside	(6)3036 (2)3489	NO_2	N	Y 0m	5m	Y
Felixstowe 14 (FLX 14a,b,c)	Industrial	(6)2860 (2)3284	NO_2	N	Y 0m	N/A	N
Felixstowe 17 (FLX 17a,b,c)	Roadside	(6)2881 (2)3632	NO_2	N	Y 0m	31m	Y
Felixstowe 18 (FLX 18a,b,c)	Roadside	(6)2751 (2)3814	NO_2	N	Y 8m	23m	Y
Felixstowe 19 (FLX 19)	Urban background	(6)2849 (2)3601	NO_2	N	Y 10m	N/A	N/A
Felixstowe 20 (FLX 20)	Industrial / Road traffic	(6)2867 (2)3398	NO_2	N	Y 0m	54m	Y
Felixstowe 21 (FLX 21)	Urban background	(6)2925 (2)3443	NO_2	N	Y 9m	N/A	N/A
Felixstowe 22 (FLX 22)	Industrial	(6)2917 (2)3344	NO_2	N	Y 0m	N/A	N
Felixstowe 23 (FLX 23a,b)	Roadside	(6)2854 (2)3659	NO_2	N	Y 0m	25m	Y
Felixstowe 24 (FLX 24)	Roadside	(6)2834 (2)3462	NO_2	N	Y 0m	32m	Y
Felixstowe 25 (FLX 25)	Roadside	(6)2852 (2)3530	NO_2	N	Y 0m	23m	Y
Felixstowe 26 (FLX 26a,b,c)	Industrial / Road traffic	(6)2796 (2)3423	NO_2	N	Y 0m	75m from roundabout	Y
Felixstowe 27 (FLX 27)	Industrial / Road traffic	(6)2795 (2)3424	NO_2	N	Y 0m	75m from roundabout	Y
Felixstowe 28 (FLX 28)	Roadside	(6)2840 (2)3487	NO_2	N	Y 0m	38m	Y
Felixstowe 29 (FLX 29)	Industrial	(6)2871 (2)3289	NO_2	N	Y 0m	N/A	N
Felixstowe 30 (FLX 30)	Industrial	(6)2873 (2)2328	NO_2	N	Y 0m	N/A	N
Felixstowe 31 (FLX 31)	Industrial	(6)2863 (2)3279	NO_2	N	Y 0m	N/A	N
Felixstowe 32 (FLX 32)	Industrial	(6)2883 (2)3287	NO_2	N	Y 0m	N/A	N
Kesgrave 4 (KSG 4)	Urban background	(6)2250 (2)4593	NO_2	N	Y 0m	N/A	N/A
Kesgrave 6 (KSG 6)	Roadside	(6)2181 (2)4578	NO_2	N	Y 0m	2.6m	Y
Kesgrave 9 (KSG 9)	Roadside	(6)2180 (2)4579	NO_2	N	Y 0m	2.6m	Y
Melton 2 (MEL 2)	Urban background	(6)2793 (2)5080	NO_2	N	Y 0m	N/A	N/A
Melton 5 (MEL 5a,b)	Roadside	(6)2814 (2)5041	NO_2	N	Y 1m	4m	Y
Melton 6 ((MEL 6)	Roadside	(6)2819 (2)5035	NO_2	N	Y 0m	18m	Y

Table 2.2 (Continued) Details of Non- Automatic Monitoring Sites

Site Name	Site Type	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)*	Worst-case Location?
Woodbridge 1 (WBG 1a,b,c)	Kerbside	(6)2759 (2)4926	NO_2	Y	Y 0m	1m	Y
Woodbridge 3 (WBG 3)	Urban background	(6)2699 (2)4848	NO_2	N	Y 9m	N/A	N/A
Woodbridge 5 (WBG 5a,b,c)	Roadside	(6)2760 (2)4924	NO_2	Y	Y 0m	2.5m	Y
Woodbridge 6 (WBG 6)	Roadside	(6)2759 (2)4925	NO_2	Y	Y 0m	2m	Y
Woodbridge 8 (WBG 8)	Roadside	(6)2759 (2)4928	NO_2	Y	Y 0m	3m	Y
Woodbridge 10 (WBG 10)	Roadside	(6)2756 (2)4924	NO_2	N	Y 1m	2m	Y
Woodbridge 12 (WBG 12)	Roadside	(6)2766 (2)4920	NO_2	N	Y 0m	5m	Y
Woodbridge 13 (WBG 13)	Roadside	(6)2758 (2)4924	NO_2	N	Y 5m	2.5m	Y
Woodbridge 15 (WBG 15)	Roadside	(6)2758 (2)4924	NO_2	Y	Y 0m	2m	Y
Woodbridge 17 (WBG 17)	Roadside	(6)2761 (2)4926	NO_2	N	Y 0m	7m	Y
Woodbridge 18 (WBG 18)	Roadside	(6)2762 (2)4933	NO_2	Y	Y 0m	1.5m	Y
Woodbridge 20 (WBG 20)	Roadside	(6)2760 (2)4929	NO_2	N	Y 0m	1.5m	Y
Woodbridge 21 (WBG 21)	Roadside	(6)2754 (2)4923	NO_2	N	Y 0m	5m	Y
Woodbridge 22 (WBG 22)	Roadside	(6)2763 (2)4923	NO_2	N	Y 0m	8m	Y
Woodbridge 23 (WBG 23)	Kerbside	(6) 2755 (2) 4923	NO_2	N	Y 1m	1m	Y
Martlesham 1 (MRT 1a,b,c)	Roadside	(6)2463 (2)4544	NO_2	N	Y 0m	21m	Y

Figure 2.1a Location of the Automatic NOx analyser, AQMA, and NO_2 diffusion tubes sited at the Woodbridge Junction



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Not to scale

N

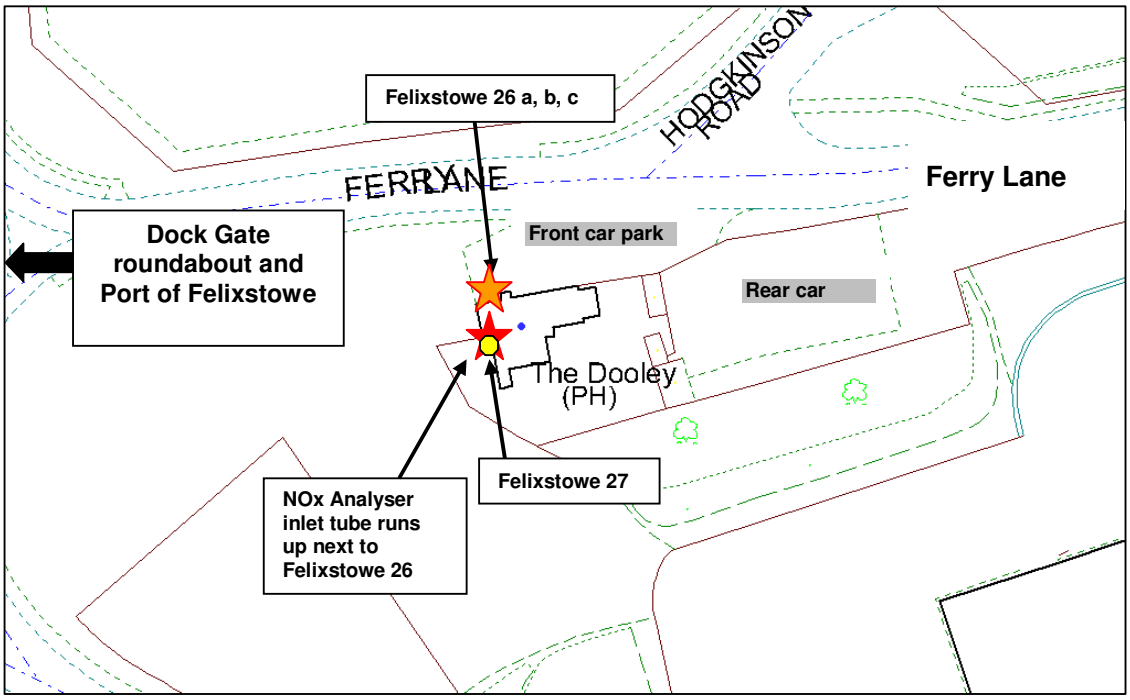
Single Diffusion tube site

Site of Automatic NO_x Analyser

Triplicate Diffusion tube site

AQMA

Figure 2.1b Site map showing location of automatic NOx analyser and NO_2 diffusion tubes at The Dooley Inn Public House, Ferry Lane, Felixstowe



2.2 Comparison of Monitoring Results with Air Quality Objectives

Within the Suffolk Coastal district in 2009 monitoring was undertaken for nitrogen dioxide using both automatic analysers and diffusion tubes. No other pollutants were monitored.

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

A summary of the results of automatic monitoring of NO_2 at both the Woodbridge and Felixstowe sites can be seen in tables 2.3a and 2.3b. Table 2.3a presents results comparable with the annual mean objective of 40µg/m^3, and Table 2.3b presents results comparable with the 1-hour mean objective of 200µg/m^3. In addition to the most recent monitoring, results for 2007 and 2008 have also been included in the tables for comparison purposes. Detailed summary tables and graphs showing the 2009 monitoring results for both sites are presented in Appendix E.

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

Site ID	Location	Within AQMA?	Data Capture for full calendar year 2009 %	Annual mean concentration (µg/m^3)		
				2007	2008	2009
Woodbridge	Woodbridge Junction	Yes	96.1	**46**	**45**	**45**
Felixstowe	The Dooley Inn, Ferry Lane, Felixstowe	Yes	93	**42**	**42**	**44**

Table 2.3b Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture for full calendar year 2009 %	Number of Exceedences of hourly mean (200 µg/m^3)		
				2007	2008	2009
Woodbridge	Woodbridge Junction	Yes	96.1	**2**	**1**	**0**
Felixstowe	The Dooley Inn, Ferry Lane, Felixstowe	Yes	93	**0**	**0**	**3**

The automatic analysers at Woodbridge and Felixstowe are sited within declared AQMAs and show the annual mean concentration at both locations to be above the air quality objective (Table 2.3a). Over the monitoring period (2007–2009) the annual mean concentration at both sites does not fluctuate significantly. The 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times per year) is not exceeded at either site (Table 2.3b), however at the Felixstowe site during 2009 there were 3 exceedances of the 200µg/m^3 figure which has not been previously seen. The annual mean concentration at the Felixstowe monitoring site in 2009 was also slightly elevated above that seen in previous years. One explanation for this increase may be the heavy snowfall seen in December 2009 which made it very difficult for heavy goods vehicles accessing Hodgkinsons Road, near to the monitoring location, to travel up the incline from Dock Spur 2 roundabout towards the monitoring site. We have obtained the annual mean concentration at the monitoring site for January to November 2009 (missing out the snowy December period), which is 42µg/m^3 as for previous years (see Appendix E). Future monitoring results will enable us to ascertain whether 2009 was an anomaly or whether the levels have increased at this site.

Diffusion tube monitoring data

A summary of the results of diffusion tube monitoring of NO_2 at sites within the district can be seen in Table 2.4 overleaf, these results are comparable with the annual mean objective of 40µg/m^3. In addition to the most recent monitoring results for 2009, the results for 2007 and 2008 have also been included in the table for comparison purposes. Detailed tables showing the monthly monitoring results for all sites in 2009 are presented in Appendix F. The graphs in Figures 2.4a to 2.4d show the trends over time at a number of long term sites within the district.

The results of diffusion tube monitoring undertaken within the district (Table 2.4 overleaf) show a number of sites where the annual mean NO_2 concentration is above the objective of 40µg/m^3 in 2009. All of these sites are within the declared AQMAs either at Woodbridge or Felixstowe.

There are 4 diffusion tube sites which recorded an annual mean NO_2 concentration of 40µg/m^3 or above in 2007 and/or 2008, but which in 2009 are now below the objective level. These sites are all representative of public exposure:

KSG 9 (118 Main Road)
WBG 15 (87 Thoroughfare)
WBG 18 (106/108 Thoroughfare)
WBG 20 (97 Thoroughfare)

The annual mean concentration at the **Kesgrave** site (KSG 9) reduced significantly after 2007, which appears to be related to the bias correction factors used. In 2007 the results from the co-location study undertaken at Woodbridge were used to adjust all diffusion tubes in Woodbridge, Kesgrave and Melton. The bias adjustment factor obtained for this site has proven to be very conservative every year (when compared with the laboratory bias factor), and as this monitoring location is unusual in that it is situated at a busy road junction and within a street canyon it was decided in 2008 and 2009 to use the laboratory bias correction factor for Kesgrave and Melton. The bias adjustment decisions made for 2008 are available in the report titled '2009 Air Quality Updating and Screening Assessment for Suffolk Coastal District Council' and the decisions made for 2009 are stated in Appendix C of this report.

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	Within AQMA?	Data Capture for monitoring period 2009 %	Data Capture for full calendar year 2009 %	Annual mean concentrations (µg/m^3) adjusted for bias. Adjustment factor used is in brackets		
					2007	2008	2009
FLX 4	37 Lynwood Avenue	N	n/a	100%	**23** (0.85)	**24** (0.8)	**22** (0.82)
FLX 12	Ford Bros., Hamilton Rd	N	n/a	91.7%	**34** (0.85)	**32** (0.8)	**38** (0.82)
FLX 14a,b,c	1 Adastral Close	N	n/a	100%	**33** (0.85)	**29** (0.8)	**28** (0.82)
FLX 17a,b,c	38 Spriteshall Lane, Trimley	N	n/a	100%	**30** (0.85)	**30** (0.8)	**27** (0.82)
FLX 18a,b,c	67 Kirton Road, Trimley	N	n/a	100%	**33** (0.85)	**31** (0.8)	**29** (0.82)
FLX 19	4 Welbeck Close, Trimley	N	n/a	100%	**27** (0.85)	**28** (0.8)	**24** (0.82)
FLX 20	73 Glemsford Close	N	n/a	100%	**29** (0.85)	**28** (0.8)	**25** (0.82)
FLX 21	4 Kingsfleet Road	N	n/a	100%	**29** (0.85)	**27** (0.8)	**25** (0.82)
FLX 22	13 Levington Road	N	n/a	100%	**29** (0.85)	**28** (0.8)	**25** (0.82)
FLX 23a,b	23 Heathgate Piece, Trimley	N	n/a	100%	**32** (0.85)	**32** (0.8)	**29** (0.82)
FLX 24	22 Brandon Road	N	n/a	100%	**35** (0.85)	34 (0.8)	**31** (0.82)
FLX 25	46 Rendlesham Road	N	n/a	100%	**33** (0.85)	33 (0.8)	**30** (0.82)
FLX 26a,b,c	The Dooley Inn, Ferry Road	Y	n/a	100%	**42** (0.78)	**42** (0.77)	**45** (0.88)
FLX 27	The Dooley Inn, Ferry Road	N	n/a	100%	**37** (0.78)	**36** (0.77)	**38** (0.88)
FLX 28	63 Blyford Way	N	n/a	100%	**32** (0.85)	**30** (0.8)	**34** (0.82)
FLX 29	18 Adastral Close	N	n/a	100%	**31** (0.85)	**30** (0.8)	**27** (0.82)
FLX 30	39 Adastral Close	N	n/a	100%	**27** (0.85)	**26** (0.8)	**23** (0.82)
FLX 31	44 Adastral Close	N	n/a	100%	**31** (0.85)	**33** (0.8)	**28** (0.82)
FLX 32	64 Adastral Close	N	n/a	100%	**28** (0.85)	**27** (0.8)	**25** (0.82)
KSG 4	Kesgrave High School, Main Rd	N	n/a	100%	**21** (0.96)	**18** (0..8)	**17** (0.82)
KSG 6	The Bell Inn, Main Rd	N	n/a	100%	**27** (0.96)	**27** (0.8)	**26** (0.82)
KSG 9	118 Main Road	N	n/a	100%	**40** (0.96)	**34** (0.8)	**33** (0.82)
MEL 2	106 Hall Farm Road	N	n/a	100%	**16** (0.96)	**15** (0.8)	**14** (0.82)
MEL 5a,b	6 The Street	N	n/a	100%	**33** (0.96)	**28** (0.8)	**24** (0.82)
MEL 6	Melton CPS, Melton Road	N	n/a	91.7%	**22** (0.96)	**18** (0.8)	**19** (0.82)
WBG 1a,b,c	93 Thoroughfare	Y	n/a	100%	**46** (0.96)	**46** (0.9)	**45** (0.9)
WBG 3	8 Kingston Farm Road	Y	n/a	91.3%	**19** (0.96)	**20** (0.9)	**15** (0.9)
WBG 5a,b,c	Suffolk Place, Lime Kiln Quay Rd	N	n/a	100%	**31** (0.96)	**30** (0.9)	**28** (0.9)
WBG 6	87 Thoroughfare	Y	n/a	100%	**43** (0.96)	**44** (0.9)	**41** (0.9)
WBG 8	95 Thoroughfare	Y	n/a	100%	**47** (0.96)	**46** (0.9)	**42** (0.9)
WBG 10	St John's Street signpost	N	n/a	91.7%	**37** (0.96)	**35** (0.9)	**34** (0.9)
WBG 12	8 Lime Kiln Quay Road	N	n/a	100%	**30** (0.96)	**30** (0.9)	**26** (0.9)
WBG 13	85 Thoroughfare	N	n/a	100%	**39** (0.96)	**37** (0.9)	**34** (0.9)
WBG 15	87 Thoroughfare	Y	n/a	91.7%	**44** (0.96)	**39** (0.9)	**38** (0.9)
WBG 17	Suffolk Place, Lime Kiln Quay Rd	N	n/a	100%	**32** (0.96)	**33** (0.9)	**31** (0.9)
WBG 18	106/108 Thoroughfare	N	n/a	100%	**40** (0.96)	**39** (0.9)	**38** (0.9)
WBG 20	97 Thoroughfare	Y	n/a	100%	**42** (0.96)	**41** (0.9)	**38** (0.9)
WBG 21	27 St John's Street	N	n/a	100%	**23** (0.96)	**23** (0.9)	**20** (0.9)
WBG 22	Suffolk Place, Lime Kiln Quay Rd	N	n/a	100%	~	**26** (0.9)	**24** (0.9)
WBG 23	Lamppost at 50 St. John's Street	N	n/a	100%	~	~	**29** (0.9)
MRT 1a,b,c	*Horseman Court, Eagle Way*	*N*	*100%*	*66.7%*	~	~	***29*** *(0.82)*

MRT 1a,b,c – This site only collected 8 months of data during 2009 (29th April 2009 to 29th December 2009). The long term annual mean has been estimated using guidance provided in box 3.2 of LAQM.TG(09). All calculations are provided in Appendix C.

The 3 sites in **Woodbridge** (WBG 15, 18 and 20) were at or above the air quality standard of 40µg/m^3 in 2007 and all now show an annual mean concentration of 38µg/m^3 in 2009. Woodbridge 15 and 20 are within the declared AQMA and Woodbridge 18 is in close proximity to it (see Map 2.1). Looking at the other monitoring locations in Woodbridge there does appear to be a slight downward trend at all sites between 2007 and 2009, some showing this more clearly than others. This can also be seen from the trend graph for Woodbridge in Figure 2.4d. A draft Air Quality Action Plan has been drawn up for the Woodbridge Junction and is currently being consulted upon, however some alterations have been made to the traffic light sequencing at the junction in the interim period which may have caused emissions to be reduced at the junction. Monitoring is continuing and the Action Plan will be finalised within the next few months which will hopefully enable the downward trend in annual mean concentrations to continue at this junction.

Diffusion tube trend graphs

NO_2 levels have been monitored in Suffolk Coastal since 1993 using diffusion tubes, however most of the original sites have now been relocated or removed. In 1999 the laboratory supplying and analysing the diffusion tubes was changed which caused a marked increase in the NO_2 monitoring results for all sites. Since 1999 the same analyst laboratory has been employed and so monitoring data has only been presented from 1999 onwards for the purpose of obtaining information on air quality trends.

Many of the current diffusion tube sites are in place for short-term assessment of locations of concern and are not relevant for the purpose of obtaining trend information. The graphs in figures 2.4a to 2.4d on the following pages show the annual average concentration of NO_2 recorded at those sites planned, at the current time, to remain in place for the foreseeable future. Only sites with five or more years of data that could provide useful information on trends have been included in the graphs.

All data presented has been corrected for laboratory bias but the way in which this has been done has altered considerably over the years:

- During 1999, 2000 and 2001 a bias correction factor provided by the laboratory itself was used.
- For 2002 the bias correction factor was calculated for all diffusion tube sites from a collocation study undertaken at Melton.
- For 2003 the bias correction factor was calculated for all diffusion tube sites from the collocation study undertaken at Kesgrave.
- From 2004 to 2007 the bias correction factor was calculated for all diffusion tube sites from the collocation study undertaken at Woodbridge.
- In 2007 three collocation studies were undertaken on the district (Woodbridge, Felixstowe Dooley Inn and Felixstowe Adastral Close). Differences were seen between each of the three collocation sites suggesting that the bias correction factors were quite site specific with Woodbridge providing the most conservative factor. For 2007 data the Woodbridge bias correction factor was used for Woodbridge, Kesgrave and Melton, the Dooley Inn factor was used only for sites at The Dooley Inn and the Adastral Close factor was used for all other sites in Felixstowe.
- During 2008 and 2009 there were two collocation studies undertaken on the district (Woodbridge and Felixstowe Dooley Inn). The bias adjustment factor for Felixstowe Dooley Inn has only been used to adjust tubes at this location. As the bias adjustment factor obtained for Woodbridge has proven to be very conservative every year (when compared with the laboratory bias factor), and as this monitoring location is unusual in that it is situated at a busy road junction and within a street canyon we

decided to only use it for sites in Woodbridge. The laboratory bias correction factor was used for all other sites in Felixstowe, Kesgrave and Melton.

The graphs should, therefore, be viewed with some care as although the same laboratory was used to supply and analyse the tubes the bias correction method has altered during this period.

For all sites in place from 1999, there is a marked decrease between 1999 and 2000 and then an increase until 2002. We are unsure as to the cause of this but as it is shown in both Urban Background and Kerbside sites it may be related to the bias correction of the tubes.

At all sites across the district, with the exception of Felixstowe 12 (Hamilton Road), there appears to be a general decrease in concentrations during the last 2-3 years. This could again be due to bias correction factors as after 2007 more accurate bias correction factors have been used for a number of the site types, as explained above. This trend is, however, also seen in Woodbridge which has used the collocated bias correction factor from Woodbridge consistently since 2004. This suggests that the decreasing trend across the district is real rather than a result of choice of bias correction factor.

The site at Hamilton Road in Felixstowe (FLX 12) was also experiencing a downward trend until 2009 when concentrations recorded have increased significantly. This is thought to be related to alterations in the traffic flows along Hamilton Road in Felixstowe following installation of additional traffic lights, together with a number of road works that were in place during 2009 in this area. Monitoring at this location is continuing and we will be able to assess the situation further at the end of 2010.

There are trends within each of the four areas monitored:

- Felixstowe – there was a slight rise in concentrations seen at the majority of sites between 2005 and 2006 with levels decreasing since this time. The exceptions being FLX 12 in Hamilton Road (discussed above) and FLX 14 in Adastral Close. Concentrations at FLX 14 increased between 2003 and 2005 and have then decreased each year from this time. This trend may be related to activity on the Port of Felixstowe as Adastral Close is very near to the area where the Felixstowe South Reconfiguration expansion is occurring and general Port activity has decreased in this area whilst the expansion is underway.
- Kesgrave - the urban background site (KSG 4) and the roadside site (KSG 6) show a similar stable trend in NO_2 concentrations from 2003 to 2009, with an overall decrease seen in this time. The second roadside site (KSG 9) also shows a similar trend to the others except for a noticeable increase in NO_2 concentrations between 2005 and 2007. Following 2007, laboratory bias correction factors have been used at Kesgrave sites in place of the very conservative Woodbridge collocation factor which may explain the decrease between 2007 and 2008.
- Woodbridge – all sites in Woodbridge follow a similar trend in NO_2 concentrations, stabilising since 2002 but with a general decrease seen in the last 2-3 years.
- Melton – both sites show a similar trend from 2003 with an increase in NO_2 concentrations from 2004 to 2006/2007 and then a decrease since this time.

Figure 2.4a Trends in Annual mean nitrogen dioxide concentrations measured at permanent diffusion tube sites in Felixstowe.

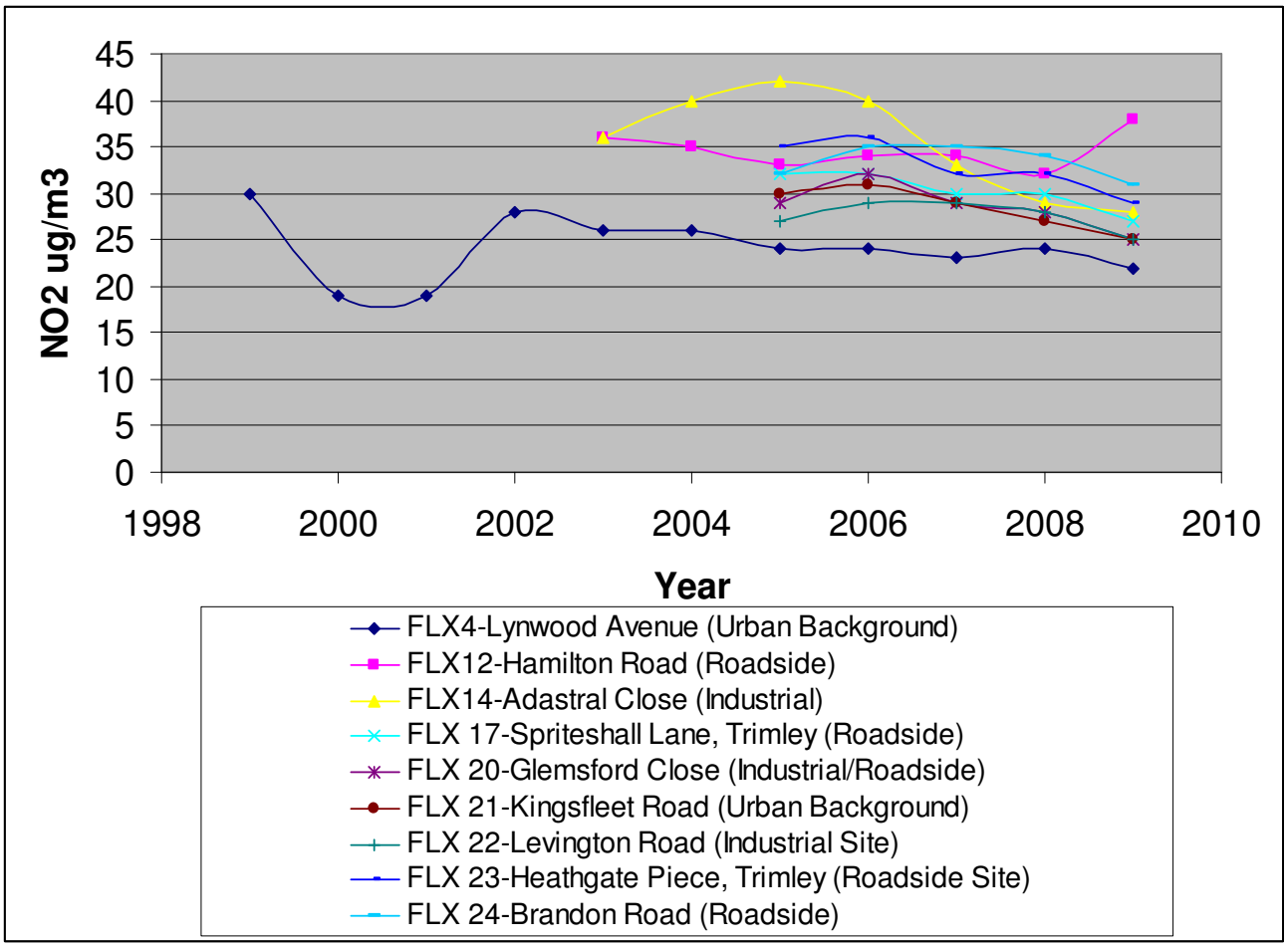


Figure 2.4b Trends in Annual mean nitrogen dioxide concentrations measured at permanent diffusion tube sites in Melton.

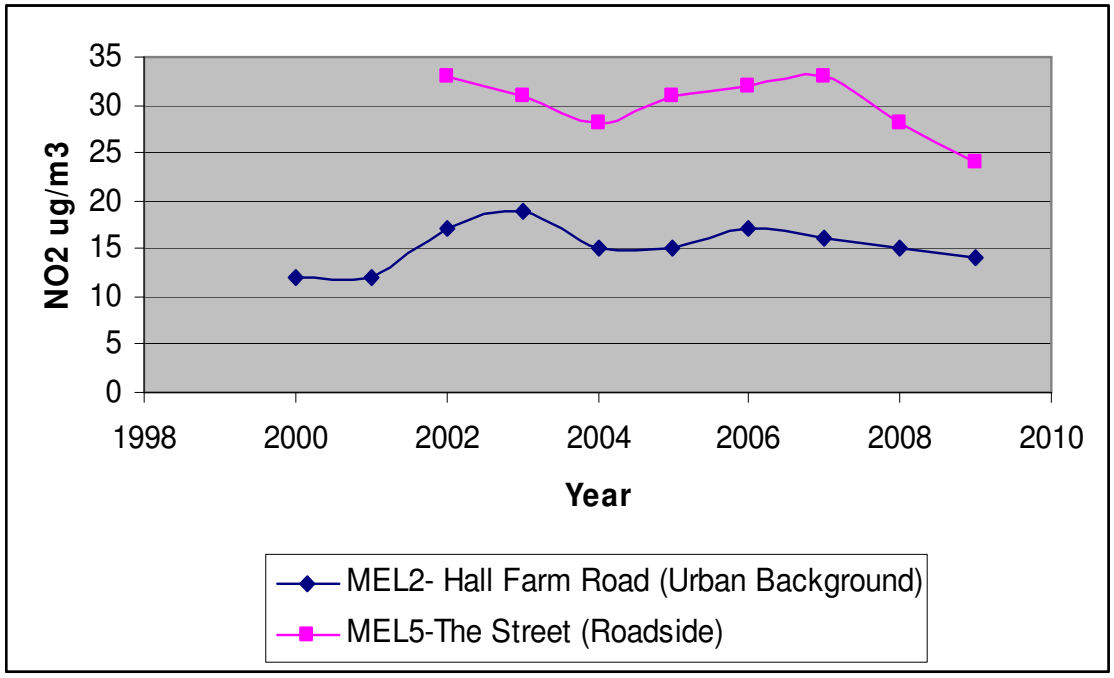


Figure 2.4c Trends in Annual mean nitrogen dioxide concentrations measured at permanent diffusion tube sites in Kesgrave.

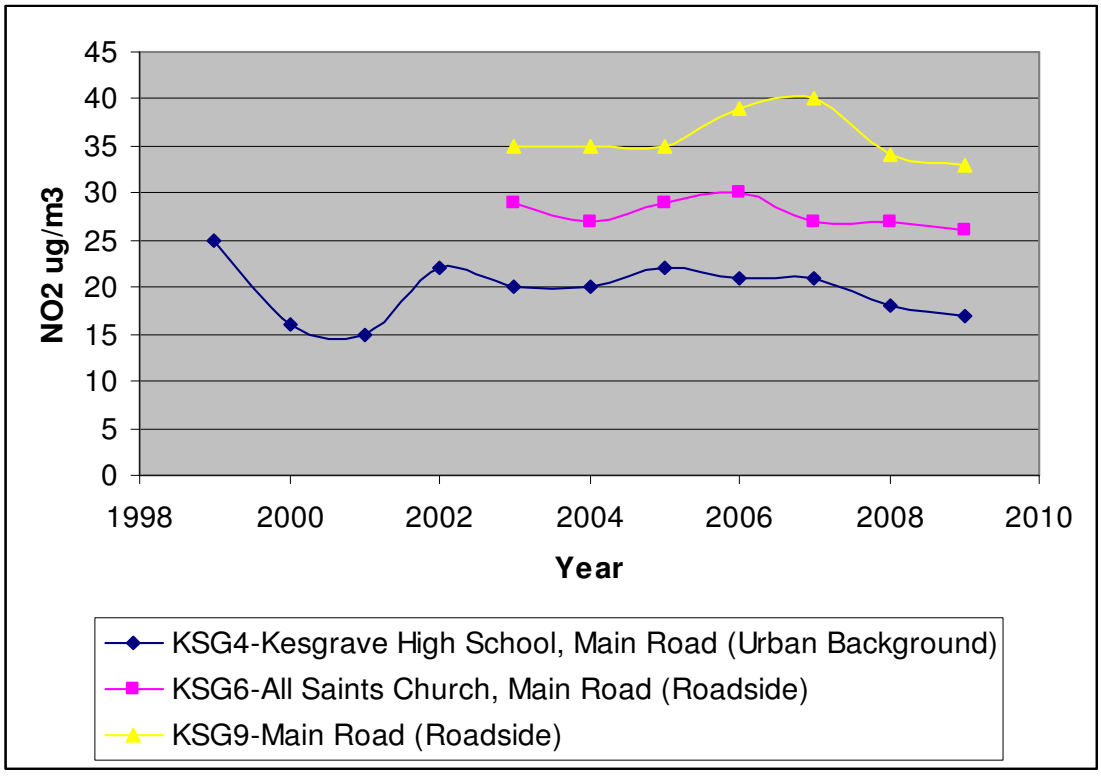
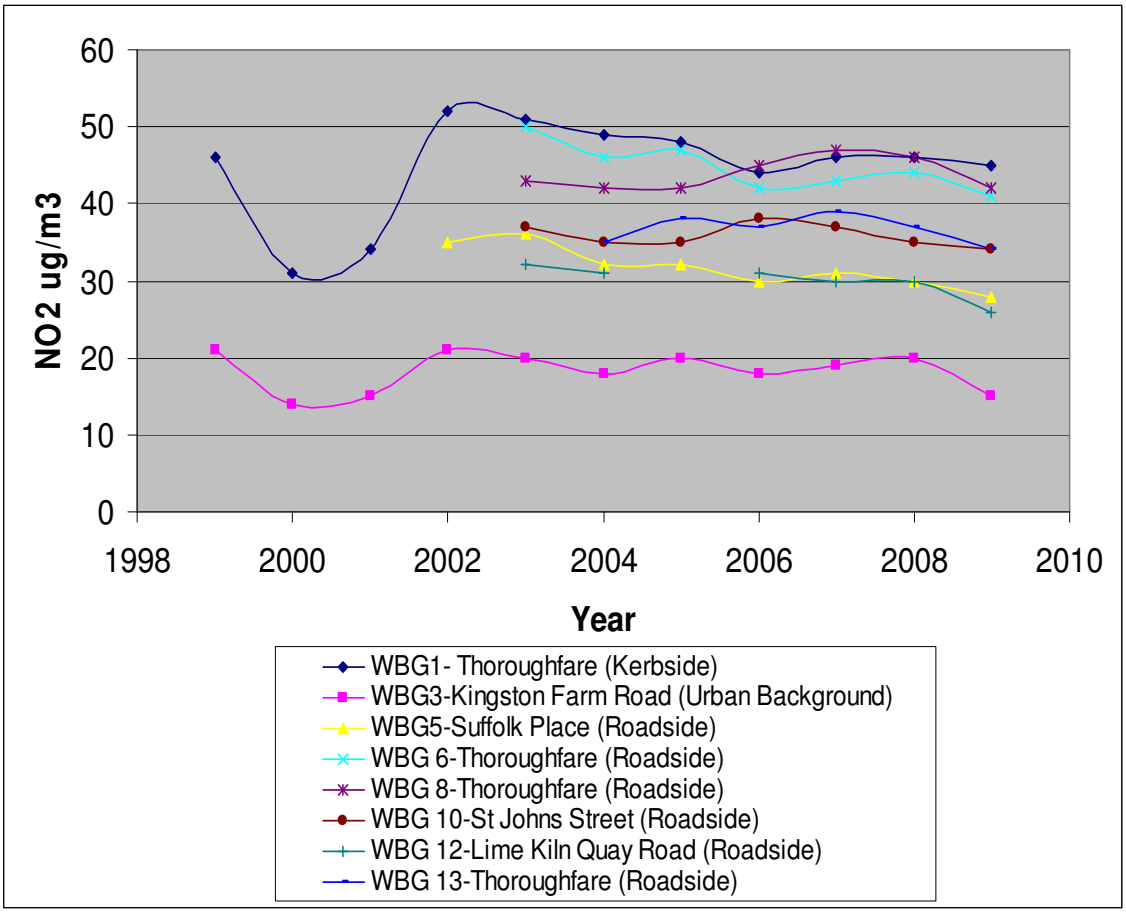


Figure 2.4d Trends in Annual mean nitrogen dioxide concentrations measured at permanent diffusion tube sites in Woodbridge.



2.2.2 Summary of Compliance with AQS Objectives

Suffolk Coastal District Council has examined the results from monitoring in the district. Concentrations outside of the two declared Air Quality Management Areas are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

Any new local developments, since the 2009 Updating and Screening Assessment Report, that may affect air quality within the Suffolk Coastal district are listed in this Progress Report so that they can be considered in more detail during the next full round of review and assessment. This includes developments that are now in operation or have been granted planning permission to be brought into operation in the near future.

3.1 Road Traffic Sources

Any new / newly identified road traffic sources within the Suffolk Coastal district since the 2009 Updating and Screening Assessment must be identified, this includes;

- Narrow congested streets with residential properties close to the kerb.
- Busy streets where people may spend one hour or more close to traffic.
- Roads with a high flow of buses and/or HGVs.
- Junctions.
- New roads constructed or proposed since the last Updating and Screening Assessment.
- Roads with significantly changed traffic flows.
- Bus or coach stations.

There are no new / newly identified road traffic sources within the Suffolk Coastal district since the 2009 Updating and Screening Assessment.

3.2 Other Transport Sources

Any new / newly identified transport sources within the Suffolk Coastal district since the 2009 Updating and Screening Assessment must be identified, this includes;

- Airports.
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.
- Locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.
- Ports for shipping.

There are no new / newly identified transport sources within the Suffolk Coastal district since the 2009 Updating and Screening Assessment.

3.3 Industrial Sources

Any new / newly identified industrial sources within the Suffolk Coastal district since the 2009 Updating and Screening Assessment must be identified, this includes;

- **Industrial installations:** new or proposed installations for which an air quality assessment has been carried out.
- **Industrial installations:** existing installations where emissions have increased substantially (greater than 30%) or new relevant exposure has been introduced.

- **Industrial installations:** new or significantly changed installations with no previous air quality assessment.
- Major fuel storage depots storing petrol.
- Petrol stations.
- Poultry farms.

New installations

There are 5 new Part A1 industrial installations (regulated by the Environment Agency) permitted under the Environmental Permitting Regulations 2010 that have been authorised since the Updating and Screening Assessment in 2009, listed below:

- Waste Recycling Limited, Foxhall Civic Amenity Site, Foxhall Road, Brightwell
  Disposal of Waste, Section 5.2

- Waste Recycling Limited, Foxhall Household Waste Site, Foxhall Road, Brightwell
  Disposal of Waste, Section 5.2

- Waste Recycling Limited, Felixstowe Civic Amenity Site, Carr Road, Felixstowe
  Disposal of Waste, Section 5.2

- Waste Recycling Limited, Leiston Civic Amenity Site, Lovers Lane, Leiston
  Disposal of Waste, Section 5.2

- REG Bio-Power UK Ltd, Unit F Building 89, Bentwaters Parks, Rendlesham
  Combustion Activity, Section 1.1

There are 2 new planned industrial installations for which air quality investigations have been/ are in the process of being undertaken, listed below:

- Crematorium, Porters Covert, Nacton
  Crematoria, Section 5.1

- Agri-Gen Ltd, Building 723, Bentwaters Parks, Rendlesham
  Combined Heat and Power biogas plant

Waste Recycling Limited – Disposal of Waste - Foxhall, Felixstowe and Leiston

These A1 installations are all recycling sites within the district, authorised by the Environment Agency. There are no significant emissions of any pollutants covered by the Local Air Quality Management regime. No further assessment is required.

REG Bio-Power UK Ltd, Bentwaters Parks, Rendlesham

This installation involves the operation of 12 engines using biofuel produced by the recovery of waste edible cooking oil (LF100) and virgin vegetable oil to generate electricity for off-site export to the national grid. The site generates 4.8MW and requires an Environmental Permit from the Environment Agency (A1 process) as the LF100 fuel is manufactured from waste. The site is currently operating using virgin vegetable fuel oil only, which does not require a permit, and each of the 12 engines discharges through an individual short stack.

In order to obtain an Environmental Permit, air dispersion modelling (using AERMOD 7) was undertaken to assess the impact from 12 engines operating on LF100 fuel and emitting through a single stack. The modelling was undertaken to determine the stack height and diameter required such that off-site impacts from emissions meet the required Environmental Assessment Limits for the protection of human health and vegetation and ecosystems. The pollutants considered were nitrogen dioxide, sulphur dioxide and particulate matter.

The modelling used a number of conservatisms so that the actual impacts would be expected to be less than those presented, including 5 years of meteorological data. The modelling indicated that a stack height of 16m with a diameter of 0.781m would result in the air quality objectives being met. The modelling was run using these stack dimensions and results showed that all predicted long-term and short-term maximum ground level concentrations for all modelled substances will be below the relevant Air Quality Standard.

Crematorium, Porters Covert, Seven Hills, Nacton

An application has been received for the construction of a new Crematorium at Porters Covert, Seven Hills, Nacton. The proposed cremation facility will incorporate 2 cremators with flue gas treatment for abatement of polluting emissions.

Advice was obtained from the Defra run local authority review and assessment helpdesk, who advised that new crematoria would not be classified as significant emitters of any of the pollutants of concern and no further assessment would be necessary.

Agri-Gen Ltd, Bentwaters Parks, Rendlesham (Planning Application C08/2152)

This Planning Application was received for a Combined Heat and Power Biogas plant opposite building 568 at Bentwaters Park in Rendlesham. This is for a 2MW facility (producing 2MW of energy every hour) that would use up to 30,000 tonnes per annum of agricultural biomass. The biomass will be processed using anaerobic digestion in sealed tanks to produce methane rich biogas, this will then be burnt on site to generate electricity and solid and liquid composts for use as a fertiliser. The proposal is for either one 2MW engine or two 1MW engines to burn the biogas. Following receipt of the Environmental Statement for the installation this department requested that quantitative atmospheric dispersion modelling of pollutant emissions from the plant be completed.

The Air Quality Assessment was produced March 2009 and modelled emissions of nitrogen oxides (NOx) and particulates (PM_{10}) from proposed biogas engines and their impacts on relevant receptor locations using the computer model ADMS 4. The report concluded that the impact of emissions from the biogas engines will be negligible according to criteria recommended by the National Society for Clean Air.

The installation received planning consent and the applicants confirmed that they will be installing two 1.13MW engines the emissions from which were modelled in the above air quality assessment. The site is not yet built.

Industrial emissions with substantially increased emissions

Within the Suffolk Coastal district there are three existing industrial installations, permitted under the Environmental Permitting Regulations 2010, with the potential to emit significant quantities PM_{10}, these are listed overleaf.

- Cemex UK Materials Limited (Trading as Ipswich Coated Stone), Sinks Pit, Kesgrave
- Ringway Infrastructure Services, Foxhall Four Quarry, Foxhall Road, Brightwell
- Novera Energy, Foxhall Generation Plant, Foxhall Landfill Site, Foxhall Road, Brightwell

LAQM.TG (09) advises that it should be determined whether any of the installations have either experienced substantially increased emissions (greater than 30%) or have received new relevant exposure in their vicinity since the last review and assessment.

None of the installations have received any new relevant exposure. Recent emission testing reports for the installations have been obtained for comparison with emissions recorded in 2008 (the date of the emissions used in the last updating and screening assessment). **Cemex UK Materials Limited experienced a 400% increase in PM_{10} emissions between 2008 and the most recent emissions recorded in March 2010 and therefore requires assessment here.**

Annual emissions of Total Particulate Matter (assumed to all be PM_{10} for this assessment) recorded from the road stone coating plant at Cemex UK Materials Limted from 2008 to 2010 are detailed below:

2008 – 0.13 tonnes per annum
2009 – 0.5 tonnes per annum
2010 – 0.65 tonnes per annum

LAQM.TG (09) provides a calculation method for PM_{10} emissions, in the form of nomograms, to estimate the emission rate (in tonnes per annum) that would produce a 1 $\mu g/m^3$ contribution to the 90th percentile of 24-hour mean concentrations (for assessment against the 2004 objective). If the actual emission rate from the installation exceeds these thresholds then it will be necessary to proceed to a Detailed Assessment.

The following information was obtained for the chimney at Cemex UK Materials Limted :

- Actual (and effective) stack height = 14.5m
- Exit temperature = 25^{o}C
- Stack diameter = 1.05m

As the exit temperature from the stack is less than 100^{o}C and the effective stack height is greater than 10m, the Technical Guidance LAQM.TG (09) advises to use nomogram Figure 5.5 for the assessment. Using this nomogram, the emission rate that would produce a 1$\mu g/m^3$ contribution to the 90th percentile of 24-hour mean concentrations would be 0.45 tonnes per annum.

LAQM.TG (09) advises that for PM_{10} emissions the impact will be largely dependant on the background concentrations in the locality. A precautionary method of taking the background concentration into account is to multiply the allowed emission by 32 minus the background. This will give a background-adjusted permitted emission for the installation, the calculations are summarised overleaf:

- The estimated annual mean background concentration for 2009 at this location is 17.2µg/m^3.
- 32 minus 17.2 = 14.8
- 0.45 tonnes per annum multiplied by 14.8 = 6.7 tonnes per annum.

The background-adjusted permitted emission for the installation is therefore 6.7 tonnes per annum. As the rate of emission in 2010 for the installation was 0.65 tonnes per annum, well below 6.7 tonnes per annum, further Detailed Assessment is not required.

3.4 Commercial and Domestic Sources

Consideration must be given to the use of biomass combustion in the commercial and domestic sectors, and to other solid-fuel combustion in domestic use. Biomass burning can lead to an increase in both PM_{10} and NOx emissions due to the process of combustion.

Any of the following, newly identified since the Updating and Screening Assessment 2009, must be listed in this report:

- Biomass combustion plant – individual installations.
- Areas where the combined impact of several biomass combustion sources may be relevant.
- Areas where domestic solid fuel burning may be relevant.

Individual installations

The 2009 Updating and Screening Assessment Report identified that insufficient information was available at the time to investigate biomass combustion within the district. Work has begun and we have been able to draw up a list of 21 sites we are aware of that have biomass plant with a thermal output greater than 50kW. Obtaining the details required to undertake a screening assessment of each biomass installation is proving difficult but we are currently working to obtain this information. Progress on, and results of, the screening assessments will be detailed in the next annual air quality report (Progress Report) due for production in April 2011.

Combined impacts of biomass combustion sources

There are no new areas within the district, identified since the 2009 Updating and Screening Assessment, which would trigger a Detailed Assessment for combined impacts of biomass use. As described in the above section, we have drawn up a list of individual biomass combustion plant within the district that we are aware of. Should investigation of installations on the list indicate any areas requiring a combined impact assessment this will be undertaken and reported in the next annual air quality report due for production in April 2011.

Domestic solid fuel burning

There are no new areas within the district, identified since the 2009 Updating and Screening Assessment, which would trigger a Detailed Assessment for domestic solid-fuel burning.

3.5 New Developments with Fugitive or Uncontrolled Sources

Dust emissions from a number of fugitive and uncontrolled sources can give rise to elevated PM_{10} concentrations. These sources include, but are not limited to:

- Quarrying and mineral extraction
- Landfill sites
- Coal and material stockyards or materials handling
- Major construction works
- Waste management sites

There are no new locations with significant emissions and no areas where there is any new relevant exposure that we are aware of within the district.

Suffolk Coastal 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.

We are currently working to obtain the information required in order to undertake a screening assessment of each biomass combustion installation identified within the district. The findings from the assessment will be presented in the next air quality report (Progress Report), due for production in April 2011.

4 Local / Regional Air Quality Strategy

Suffolk Coastal District Council has not drawn up a local Air Quality Strategy at the present time. We have two AQMAs declared in the district for annual mean nitrogen dioxide, each due to very localised and different sources. Air quality in these two areas will be dealt with most effectively by the individual Action Plans prepared. The need for a strategy will be considered as part of our ongoing review of air quality.

5 Planning Applications

There are a number of developments within the Suffolk Coastal district which have been recently approved or are currently waiting to be determined, and which may impact on air quality. It is important that these developments are logged in this Progress Report so that their progress through the planning system can be monitored and any potential impacts on air quality assessed. There are 4 developments that we are aware of at this time:

Land at junction of Station Road and Wilford Bridge Road and Girdlestone Pumps, Station Road, Melton – Planning Application (C09/0584)

This application was a resubmission following withdrawal of an earlier proposal (C08/0724) on the advice of Members of the Council. The application is for the demolition of the current Girdlestones building to be replaced by the erection of 10,735m^2 of light and general industrial use. This will consist of two and three storey business units to include offices, workshops, coffee shop/café. There will also be associated external works, off site highway works and formation of new access to Station Road.

The application provided an Air Quality Assessment using the Design Manual for Roads and Bridges (DMRB) screening model to assess the impact of the proposed development on the ambient air quality near the site, at Wilford Road and Melton Road junction and also the Woodbridge junction located within an Air Quality Management Area (AQMA). The assessment findings stated that:

- The annual mean pollution concentration limit of 40 µg/m^3 for nitrogen dioxide, as set out in the Air Quality Limit Value Regulations 2000 was not exceeded in any one of the modelled receptors located outside the AQMA area, either before or after the proposed development.
- The maximum percentage increase in the level of nitrogen dioxide and particulate matter, as a result of the proposed development in years 2010 and 2011 at the receptors located outside the AQMA area are 0.6% and 0.3% respectively. Thus, the magnitude of change caused by the proposed development is therefore considered very small in accordance with the guidelines published by the National Society for Clean Air and Environmental Protection (NSCA 2006).
- The maximum percentage increase in the level of nitrogen dioxide and particulate matter, as a result of the proposed development within the AQMA area, in years 2010 and 2011, at the selected receptors near the Woodbridge junction are 0.6% and 0.2% respectively. As the percentage increase in the level of pollutants is less than 1%, it is considered that the magnitude of change is extremely small (NSCA 2006).

Overall it is considered that the impact of the proposed development on the ambient air quality near the development site and at the junction of Wilford Bridge Road and Melton Road will be very small and will not cause a breach of the limits set out in the Air Quality Limit Value Regulations of 2000. In addition, at the Woodbridge Junction, which is located within an AQMA, the increase in concentrations of the pollutants will also be very small so it has been concluded that the air quality does not constitute a material consideration in the assessment of the planning application.

The Air Quality Assessment was reviewed by this Department and the findings accepted. The application was determined on 4 March 2010 and approval was given. It is currently awaiting the signing of a Section 106 agreement before the decision is issued, this will include the Conditions to be placed upon the site.

Adastral Park, Martlesham Heath (Planning Application C09/0555)

BT submitted an outline planning application for the redevelopment of Adastral Park and land to the east and south on 12 September 2008. Comments received from Suffolk Coastal District Council, statutory consultees and local residents led to an agreement to make proposed changes to the master plan layout. As a result, BT decided to withdraw the first application and submitted a revised outline planning application on 9 April 2009.

Adastral park itself covers nearly 40 hectares (100 acres), and BT own a further 100 hectares (250 acres) of land surrounding the site, much of which has been or will be quarried to extract sand and gravel. BT's proposals include refurbishment of Adastral Park and development of the adjoining land for the creation of a new residential community with its own infrastructure, services and facilities to provide:

- Up to 60,000m^2 net additional employment floor space, related car parking spaces and landscaping (B1)
- Up to 2,000 homes, related car parking spaces and landscaping(C3)
- Mixed use local centre (comprising health care provision (D1), community centre (D1), retail (A1), Café (A3), Public House (A4), takeaway (A5), related car parking spaces and landscaping.
- Education provision (D1)
- Hotel, related car parking spaces and landscaping (C1)
- Energy centre and other utility infrastructure (Sui Generis)
- Public car park and other areas of public open space, including formal open space provision for recreation and play
- Supporting services and facilities
- Network of landscape designed boulevards and streets to provide access and utility services for the development
- Full provision for the operation of public transport through the development, primarily on the boulevards and main streets
- New road connections to C356 (Newbourne Road/Heath Road/ Waldringfield Road) and related road improvements
- Changes to junctions on the A12
- Landscape areas and visual buffers around the perimeter of the land
- Ground remodelling following minerals extraction (subject to separate minerals planning application)
- Other minor works and development ancillary to the main proposals.

The Environmental Statement submitted as part of the planning application included an air quality assessment for the site which is currently being assessed by this Department. Details of the application, including the air quality assessment submitted can be viewed at www.suffolkcoastal.gov.uk/yourdistrict/devcontrol/adastralpark/documents/default.htm.

Orwell High School and land to the North West and High Street, Maidstone Road, Felixstowe (Planning Reference C10/0161)

This is an Outline Planning Application to be determined by Suffolk County Council for a new High School located on a site currently occupied by Orwell High School. Scale, Appearance, Layout and landscaping are to be reserved for future detailed submission. Access details are included as part of the application with new vehicular, pedestrian and cycle access proposed from The High Road.

The eventual aim is to provide an entirely new, state of the art school facility on the Orwell High School site which will have capacity to accommodate pupils from both Orwell and Deben Schools. The main vehicular access to the new building will be relocated to High Street.

Permission is not being sought for specific layout or design at this stage, but only for the size and location of a zone in which development can take place, as well as the new access arrangements.

Outline Planning Permission was granted by Suffolk County Council on 1 April 2010 with 43 conditions attached, those relevant to air quality are as follows:

- A screening assessment for road traffic impacts on properties in close proximity to the new access on High Street, Walton shall be submitted to and approved in writing by the County Planning Authority including:

  Details of a local air quality impact assessment in accordance with the Design Manual for Roads and Bridges methodology, to include any congestion/queuing effects on the High Street and recommendations for mitigation, if appropriate

- A design stage assessment outlining air quality and emissions from all heat and power sources (including Biomass Boilers and CHP installations) shall be submitted to and approved in writing by the County Planning Authority including:

  A biomass boiler screening assessment in accordance with Local Air Quality Management Guidance, with particular attention paid to the design height requirement of the stack. In the event of biomass being the selected form of energy supply, an assessment of emissions included under the Local Air Quality Management Guidance associated with biomass boilers should be provided, at detail design stage to the County Planning Authority.

Land between Rendham Road and A12, Rendham Road, Saxmundham (Planning Application C10/0294)

The site encompasses an area of 5.2 hectares of former agricultural land on the western edge of Saxmundham, broadly between Rendham Road (to the north) and the A12 (to the west). It is an Outline Planning Application for 90 residential units, a small retail store (in the region of 100 sq. m), and 8,500m^2 of B1 (Business), B2 (General Industrial), B8 (Storage or Distribution) space together with associated highways, car parking, land, landscaping and other associated works. Details have been submitted showing a proposed site layout and potential impact. However, the detailed layout of uses and buildings on the site are reserved for later approval as a 'reserved matter'.

This department was consulted as part of the Planning process and recommended, with regard to air quality, that insufficient information has been provided and that an air quality assessment should be made to determine the effect of traffic generated by the proposed development on the Air Quality Objectives.

The application went to Development Control Sub Committee on 26 May 2010 who approved the scheme subject to controlling conditions. Final approval of the application is pending these controlling conditions.

6 Air Quality Planning Policies

The land use planning system is recognised to play an integral part in improving air quality in the Local Air Quality Management regime. Government policy on planning is set out in The Planning and Compulsory Purchase Act 2004 and associated regulations and circulars. More detailed advice and guidance on a range of topics in the form of Planning Policy Guidance Notes and Planning Policy Statements.

The 2004 Act requires Local Planning Authorities to replace their existing adopted Local Plans with a new Local Development Framework. The new Local Development Framework will comprise a suite of documents as shown in Figures 6.1 and 6.2, and promote a wider spatial approach to the management of development of land than the earlier Local Plan regime. For Suffolk Coastal five Development Plan Documents will be prepared, see Figure 6.1 & 6.2.

Figure 6.1 Summary of the Local Development Framework

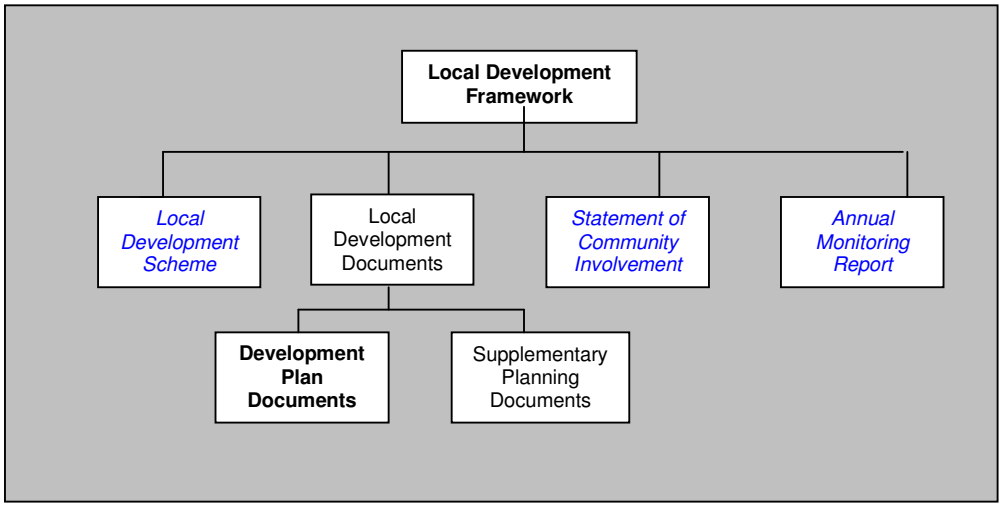
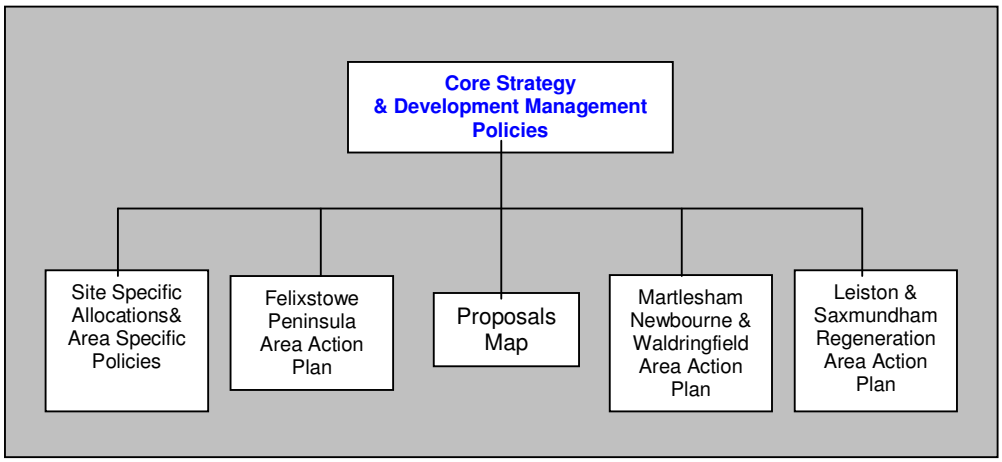


Figure 6.2 Summary of the Development Plan Documents for the Suffolk Coastal District



The most significant of these is the Core Strategy & Development Management Policies as this will establish the context for the remainder. This document deals with principles setting out a vision, strategies and objectives for the district. It cascades down to the local level advice and guidance from national and regional planning guidance.

Whilst the Core Strategy has still to be tested for "soundness" in front of an independent Planning Inspector, its policies have been adopted by the Council as interim planning policy and become a material consideration in the consideration of planning applications and enforcement. Paragraph 3.119 of the Core Strategy refers specifically to air pollution. These policies sit alongside "saved" policies from the Suffolk Coastal Local Plan (incorporating 1st and 2nd Alterations in the consideration of development proposals.

A system exists whereby all planning applications to Suffolk Coastal District Council are recorded on a Public Register. This comprehensive list is then circulated to the Principal Environmental Health Officer in the Environmental Protection team who assesses which applications will require investigation by the team. Details of these applications are then provided to members of the team for relevant comment on any issues relating to air quality, noise, contaminated land, drainage etc.

Further progress with the Core Strategy towards formal adoption is currently in limbo following the change of government at national level, and with it clear indications of early, significant changes to the planning system. Progress will resume once Government intentions become clearer, in particular in relation to what will replace the Regional Spatial Strategies which currently form part of the Local Development Framework.

Progress in relation to each of the other Development Plan Documents is set out in the Council's Local Development Scheme which is available on the Council's website. In brief, the Site Specific Allocations and Policies will relate to specific areas or places, e.g. towns and town centres. Where specific sites are allocated or designated for particular uses these will be shown on the separate Proposals Map. Area Action Plans will be prepared at a later date. These relate to areas where change is to take place and will set out an implementation plan for that change.

7 Local Transport Plans and Strategies

The Local Transport Plan system is a 5-year transport strategy at a local level whereby Local Transport Authorities are required to submit a 5-year Local Transport Plan (LTP) for their area that sets objectives and targets for transport, and strategies for achieving them. The plans must cover all forms of transport and establish strategies to tackle congestion and poor air quality. The LTP provides the basis for allocating resources to the Local Transport Authority in order for them to implement their plans. The Local Transport Authority for Suffolk is Suffolk County Council.

The Department for Transport (Dft) included air quality as one of four shared priority areas to be reported in the Second Local Transport Plan (LTP2) which covers the period from 2006 to 2011. This was the first time that air quality has been addressed separately as a priority alongside three other areas which are congestion, accessibility and road safety.

Suffolk County Council's Plan was completed early in 2006 and can be seen at http://www.suffolk.gov.uk/TransportAndStreets/Policies/SuffolkLocalTransportPlan2006-2011.htm

A full report on Suffolk's air quality, including reference to the Woodbridge Air Quality Management Area declared in April 2006, has been included in Chapter 8 of the LTP2 together with the County Council's objectives of:

a) To comply with the requirements of the National Air Quality Strategy and

b) To seek to maintain and where possible improve air quality in Suffolk.

As a result of its submission, Suffolk County Council received a rating of "excellent" from the Dft for its management of local air quality. This was awarded partly in recognition of the close working relationships developed between the two tier local authorities in Suffolk.

Following submission Dft awarded funding, through the LTP process, to address traffic and transport problems within the Woodbridge AQMA for the three financial years starting April 2008. Funding from SCC has recently been agreed in order to progress several of the measures in the draft Action Plan, and work will begin in 2010.

It was intended that the Action Plan for Woodbridge would be integrated into the LTP2 process at the appropriate biannual delivery report. This has not been possible as the Action Plan is only now being finalised and there are no more progress reports due for LTP2 as the LTP3 process has now begun. SCC is therefore intending to integrate the Woodbridge Action Plan into the LTP3, which is currently being drafted.

An LTP2 Progress Report was prepared in the summer of 2008 which provided an update on the air quality situation at that time. The report can be seen at http://www.suffolk.gov.uk/NR/rdonlyres/73AC1039-A794-4C99-96D4-F410FC90E4CB/0/ETLocalTransPlanTHIN.pdf

The linkages with the other priority areas are recognised and funding for measures to address congestion, minimise the impact of lorries on towns and Communities, and promote the sustainable transport "soft options" should also have the benefit of maintaining or improving air quality and vice versa.

A number of strategy objectives have been presented as part of the LTP2 Plan Implementation Programme, with the largest impact on Suffolk Coastal potentially arising from the objective to "Support the sustainable development of the ports of Felixstowe, Ipswich and Lowestoft in their roles as gateways to the rest of the county". This will be a vital input when drafting an Action Plan for the Air Quality Management Area declared at Ferry Lane, Felixstowe which is partially due to emissions from local road traffic external to the Port boundary. Local Transport Action Plans are no longer prepared as part of the LTP process and for the future, interventions will be developed against each of the identified strategy objectives.

The only major scheme proposed for the Suffolk Coastal district is the A12 Four Villages Bypass. A full investigative study of a number of bypass route options was carried out in 2004 which, although identifying strong economic and safety benefits, highlighted potentially severe environmental impacts. The traffic problems through the four villages of Farnham, Stratford, Glemham and Marlesford are so severe that further work on a range of alternative solutions focussing on traffic management measures to the existing route has been carried out. A number of options have been investigated at Stratford St Andrew and Farnham. The only measure considered feasible, which will be implemented in 2010, is to introduce signing and control to ensure that Heavy Goods Vehicles (HGVs) are held so that two do not pass simultaneously at the narrowest point of the sharp bend at Farnham. This would be undertaken using sensors in the road to detect HGVs approaching the bend at Farnham, should HGVs be approaching from both directions at the same time traffic lights would hold up one set of traffic. This scheme will be assessed for any air quality implications once more is known.

Works to the A1152/B1438 Melton Crossroads junction have been completed which has enabled traffic to move more freely through the junction minimising queuing and congestion.

8 Climate Change Strategies

On 26 October 2006 The Council signed the Nottingham Declaration, an acknowledgement that Climate Change is a key issue for the Council. Since then further work has been done to ensure that this area of activity is given a high priority within the Council and the Local Strategic Partnership.

Suffolk Coastal District Council's Climate Change Strategy sets out policies and specific actions to help reduce greenhouse gas emissions and prepare for the effects of a changing climate, and forms part of the ambition to support work towards a sustainable future for the district. The strategy has been developed to produce a framework for action and will be further refined with partners to help the district reduce greenhouse gas emissions and to prepare for the effects of a changing climate. There are six main greenhouse gases recognised for their global significance. These include carbon dioxide, methane and nitrous oxide. The strategy concentrates on the reduction of CO_2 emissions because this gas is released in the largest quantities, has a long term effect in the atmosphere and is the greenhouse gas that we have the greatest control over. Where there is the ability to have control over the other gaseous emissions they will not be ignored.

The vision behind the strategy is to work with others to reduce district emissions of carbon dioxide by 60% by 2025, relative to 2005 levels as set out in the Suffolk Community Strategy, reduce reliance on fossil fuels, and to have formally embedded risks and benefits from changes in the climate into the Council decision making process and to inspire others to do the same.

The Strategy sets out long term ambitions, but also includes targets and actions to be achieved in both the short and the medium term. The three core objectives to be met are:

Objective 1: Reduced carbon dioxide emissions.

- Work with partners across the County to reduce CO_2 emissions per person by 12% by 2012 and by 60% by 2025 compared to 2005.
- With service delivery partners set targets to reduce council emissions
- Work with individuals, communities and businesses to help them reduce their emissions

Objective 2: Preparing for a changing climate.

- Consider the risks faced by our district and how projected changes to the climate may impact on the services we deliver, the development we permit and the communities we serve.
- Work with local organisations to help increase understanding of potential climate risks

Objective 3: Reduced reliance on fossil fuels.

- Promote and make more efficient use of energy and to promote and use low carbon energy sources where feasible.

The Council intends to work with partners and key contractors to meet these objectives through the following key areas of action:

Objective 1: Reduced carbon dioxide emissions.

- Achieve an ongoing reduction in carbon dioxide emissions from Council operations and estate.
- Have all communities engaged in activities which will reduce carbon dioxide emissions by 2020.
- Aim towards a district that is a centre of excellence for low carbon lifestyles.

Objective 2: Preparing for a changing climate.

- Developing understanding of risks and benefits associated with changes in the climate and incorporation of these into formal decision making processes.
- Developing examples of organisations and communities in the district who are looking at how changes to the climate are affecting them.

Objective 3: Reduced reliance on fossil fuels.

- To promote and make more efficient use of energy in the delivery of our services.
- To be engaged in partnerships which are researching the best ways to reduce our reliance on fossil fuels.
- To utilise non fossil fuel dependent technologies where feasible in our own estate and operations and to promote these within our local communities.

Since signing the Nottingham Declaration, the Council has been working to reduce its own carbon emissions and encourage and support local communities to play their part in tackling climate change. The Council has:

- Worked with the Carbon Trust to identify opportunities to reduce carbon dioxide emissions from the Council's own estate;
- Has introduced, or is developing, policies to support its aims such as the Local Agenda 21 Charter, an Energy Policy, Fuel Poverty Strategy, the Local Development Framework and a Travel Plan;
- Coordinated the work of Suffolk Energy Action Link (SEAL) to promote and support the installation of energy efficient boilers, home insulation schemes and renewable energy technology in homes within the district.
- Worked with the Suffolk Climate Change Partnership and Energy Saving Trust to engage with local communities in developing climate change action plans and supporting local businesses to review and reduce their energy consumption.
- Integrated climate change into Suffolk Coastal's Sustainable Community Strategy.
- Worked with the Energy Saving Trust to review the Council's approach to climate change and review its fleet vehicles.
- Reduced Carbon Dioxide emissions following the closure of the offices at weekends, improved waste fleet completion of the insulation of the main council offices, investment in other low cost, quick win improvements such as more efficient lighting and heating controls and staff communications.

Progress against actions will be monitored by the Officer Climate Change Steering Group. Headline progress will be reported to the Green Issues Task group and through the Council's annual report. Progress in embedding the management of climate risks and opportunities across all levels of Council services, plans and estates and throughout the Local Strategic Partnership will be monitored through National Indicator 188 – Adapting to Climate Change. Progress in reducing carbon dioxide emissions from the delivery of Council services will be monitored through NI 185. Community progress in reducing carbon dioxide emissions within the district will be monitored through National Indicator 186.

If you have any questions or require further information regarding the Climate Change Strategy, please contact the Council's Environmental Sustainability Officer by email at environmental.protection@suffolkcoastal.gov.uk , or by telephone on (01394) 444624.

9 AQMA updates

9.1 Junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge (Woodbridge Junction)

On 3 March 2006 an Air Quality Management Area Order was made by Suffolk Coastal District Council for the Woodbridge Junction with regard to the annual mean NO_2 concentration, this came into effect on 3 April 2006. The designated area incorporates properties on the Western side of the Thoroughfare and Melton Hill arm of the junction with Lime Kiln Quay Road, in Woodbridge, Suffolk. A copy of the AQMA Order is included as Appendix A.

A Further Assessment was produced for the Woodbridge junction in October 2007 confirming the need for, and the extent of, the AQMA. A full public Consultation was undertaken at the time of the declaration and a great number of responses and suggestions were received. Additional responses and suggestions have continued to be received since this time.

A Steering Group was set up to produce a draft Action Plan for the junction. The group added information in the responses received to their own knowledge which has resulted in 79 potential measures to reduce emissions from road traffic and improve air quality at the junction. Each measure has been fully investigated in relation to air quality impact, cost and feasibility, culminating in a list of 20 measures recommended for implementation in the draft Action Plan. The draft Action Plan details the 20 measures, how they will be monitored and an assessment of the benefits that should occur as a result. Defra has recently approved the draft Air Quality Action Plan and a Public Consultation was completed on Friday 18th June. Numerous responses have been received from the recent Consultation, these are currently being collated for use in producing the final Action Plan for the junction. This will be sent to Defra and publicised once completed.

Inevitably, the draft Action Plan has taken time to develop but we have continued to monitor air quality at the junction and worked to introduce any measures available in the interim. A new traffic signalling system (MOVA) was installed at the junction to more effectively control queues. This went on-line in Spring 2010 and can adapt to the conditions on the ground at any time and alter the light sequencing accordingly. We are hoping that this should have a significant effect on queues and therefore air quality levels. Funding has also been secured by Suffolk County Council to progress feasibility studies for a number of the measures detailed in the draft Action Plan.

9.2 The Dooley Inn, Ferry Lane, Felixstowe

A Detailed Assessment report investigating emissions from and associated with the Port of Felixstowe was produced in May 2008 which concluded, for NO_2, that the annual mean objective was not met in 2007. The air quality modelling undertaken predicted that this would continue to be the case in future years once Felixstowe South Reconfiguration (FSR) was

on-line. It was recommended that an AQMA should be declared for the annual mean NO_2 objective to cover the Dooley Inn, Ferry Lane.

On 1 May 2009 an Air Quality Management Area Order was made by Suffolk Coastal District Council for the Dooley Inn, Ferry Lane, Felixstowe with regard to the annual mean NO_2 concentration. A copy of the AQMA Order is included as Appendix B.

External consultants TRL (Transport Research Laboratories) have been commissioned to complete the Further Assessment and draft Action Plan required for the AQMA. The Further Assessment has recently been completed and sent to Defra, we are currently awaiting their approval before undertaking a Consultation exercise on the findings.

At the end of March 2010 the continuous analyser situated at The Dooley Inn Public House, Ferry Lane, Felixstowe had to be removed from the site as the pub was vacated and boarded up and thus the electricity supply was switched off. The building has recently been sold and we are informed that it will continue to be used as a Public House. The new owners have recently taken possession of the premises and given their permission to re-install the monitoring equipment.

Work has begun on the draft Action Plan, this was put on hold whilst waiting for the outcome of the sale of the Dooley Inn but will now begin again. A full Public Consultation was undertaken regarding the AQMA declaration in November 2008 and a number of responses and suggestions have been received to date. All relevant suggestions will be investigated in order to form the final draft Action Plan.

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

Monitoring undertaken in 2009 by automatic NO_X analysers situated within the AQMAs at Woodbridge and Felixstowe confirm that the annual mean NO_2 objective continues to be exceeded at both locations, but that the 1–hour objective is not exceeded at either site.

The results of NO_2 monitoring undertaken in 2009 using diffusion tubes show a number of sites within the district where the annual mean NO_2 objective is exceeded. All of these sites are within the declared AQMAs at either Woodbridge or Felixstowe.

At all sites across the district, with the exception of Felixstowe 12 (Hamilton Road), there appears to be a general decrease in concentrations during the last 2-3 years. The sites at Woodbridge are most important here as they have used the collocated bias correction factor from the Woodbridge continuous analyser consistently since 2004. This suggests that the decreasing trend at sites across the district is real rather than a result of the source of the bias correction factor chosen.

10.2 Conclusions relating to New Local Developments

There are no new / newly identified road traffic sources or other transport sources within the Suffolk Coastal district since the 2009 Updating and Screening Assessment.

There are 5 new Part A1 industrial installations (regulated by the Environment Agency) permitted under the Environmental Permitting Regulations 2010 that have been authorised and 2 new planned industrial installations since the Updating and Screening Assessment in 2009. There are no significant emissions predicted from any of these installations and Detailed Assessment is not required.

Assessment of commercial and domestic sources has identified that insufficient information continues to be available to allow us to complete our investigation of biomass combustion installations within the district. We are currently working to obtain the information required in order to undertake a screening assessment of each installation identified and the findings will be presented in the next air quality report (Progress Report), due for production in April 2011.

10.3 Other Conclusions

The Public Consultation on the draft Action Plan for the Woodbridge Junction AQMA has recently been completed and the Action Plan is now being finalised to send to Defra. The Further Assessment for the AQMA at The Dooley inn, Ferry Lane, Felixstowe has been sent to Defra and is awaiting their approval. Work is progressing to produce a draft Action Plan for this AQMA.

There are 4 developments within the Suffolk Coastal district which have been recently approved or are currently waiting to be determined, and which may impact on air quality.

Each has been, or is in the process of being, assessed for air quality impacts by this department.

The only major traffic scheme proposed for the Suffolk Coastal district is the A12 Four Villages Bypass. A number of options have been investigated at Stratford St Andrew and Farnham. The only measure considered feasible, which will be implemented in 2010, is to introduce signing and control to ensure that Heavy Goods Vehicles (HGVs) are held so that two do not pass simultaneously at the narrowest point of the sharp bend at Farnham. This scheme will be assessed for any air quality implications once more is known.

10.4 Proposed Actions

This Progress Report has not identified the need to proceed to a Detailed Assessment for any pollutant.

Work undertaken has identified 21 sites that have biomass plant with a thermal output greater than 50Kw within the district. Insufficient information is available to allow us to undertake screening assessments for each installation, but we are currently pursuing this data. Progress on, and results of, the screening assessments will be detailed in the next annual air quality report.

The next annual air quality report due for production is the Progress Report in April 2011.

The finalised Action Plan for the Woodbridge Junction will be produced and sent to Defra within the next 2 months and work will continue to produce a draft Action Plan for the AQMA at The Dooley Inn, Felixstowe.

11 References

1. *Environment Act 1995*, Chapter 25. HMSO, 1997.

2. *Air Quality (England) Regulations 2000* – S.I 2000, No 928. HMSO, 2000.

3. *Air Quality (England) Amendment Regulations 2002* – S.I 2002, No. 3043. HMSO, 2002.

4. *The Environmental Permitting (England and Wales) Regulations 2010* – S.I 2010, No. 675. HMSO, 2010.

5. *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1 and 2)*. Report by the Department of Environment, Food and Rural Affairs in partnership with the Scottish Executive, Welsh assembly Government and Department of the Environment Northern Ireland. DEFRA Publications, July 2007.

6. *Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance. LAQM.TG (09).* Report by the Department of Environment, Food and Rural Affairs in partnership with the Scottish Executive, Welsh assembly Government and Department of the Environment Northern Ireland. DEFRA Publications, February 2009.

7. *Part IV of the Environment Act 1995, Local Air Quality Management, Policy Guidance PG (09).* Report by the Department of Environment, Food and Rural Affairs in partnership with the Scottish Executive, Welsh assembly Government and Department of the Environment Northern Ireland. DEFRA Publications, February 2009.

8. *Air Quality Review and Assessment. Further Assessment for Woodbridge Junction, Woodbridge.* Prepared by AEA Technology plc under contract to Suffolk Coastal District Council, Revised October 2007.

9. *Air Quality Review and Assessment. Detailed Assessment for Adastral Close and Ferry Lane, Felixstowe.* Prepared by AEA Technology plc under contract to Suffolk Coastal District Council, May 2008 (Version 2).

10. *Progress Report. Air Quality in the Suffolk Coastal District.* Produced by Suffolk Coastal District Council, July 2008.

11. *2009 Air Quality Updating and Screening Assessment for Suffolk Coastal District Council.* Produced by Suffolk Coastal District Council, August 2009.

12. *Suffolk Coastal District Council Air Quality Action Plan for Woodbridge – consultation draft*. Prepared by AEA Technology plc under contract to Suffolk Coastal District Council, August 2009.

13. *Suffolk Coastal District Council website* – all air quality reports produced by Suffolk Coastal District Council can be viewed at http://www.suffolkcoastal.gov.uk

14. *National Air Quality Information Archive – National Background Maps*. Information from which can be viewed at www.airquality.co.uk/archive/laqm/tools/php. *Defra*

Appendices

Appendix A: AQMA Order - Woodbridge Junction

Appendix B: AQMA Order - Ferry Lane, Felixstowe

Appendix C: QA/QC Data

Appendix D: Maps showing NO_2 diffusion tube locations

Appendix E: NO_X analyser results summaries

Appendix F: NO_2 diffusion tube results 2009

Appendix G: Traffic count information

Appendix H: Environmental Permitting Regulations 2007 – process list

Appendix I: Consultation responses

Appendix J: Domestic solid-fuel burning information

Appendix A:
AQMA Order - Woodbridge Junction

Environment Protection Act 1995, Part IV section 83(1)

Suffolk Coastal District Council

Air Quality Management Area Order

THE SUFFOLK COASTAL DISTRICT COUNCIL AIR QUALITY MANAGEMENT AREA ORDER NO 1, 2006

Suffolk Coastal District Council, in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order

This Order may be referred to as '**The Suffolk Coastal District Council Air Quality Management Area Order No 1, 2006',** and shall come into effect on the **3rd April 2006**

The area shown on the attached map hatched in red is to be designated as an air quality management area (the designated area). **The designated area incorporates properties on the Western side of the Thoroughfare and Melton Hill arm of the junction with Lime Kiln Quay Road, in Woodbridge, Suffolk.**

The map may be viewed at the Council Offices, at Melton Hill, Woodbridge, between the hours of 08.45am to 5.15pm Mondays to Thursdays, and 08.45am to 4.45pm on Fridays.

This Area is designated in relation to a likely breach of the nitrogen dioxide (annual mean) objective as specified in the Air Quality Regulations (England) (Wales) 2000.

This order shall remain in force until it is varied or revoked by a subsequent order.
Dated; this Third day of March 2006

The Common Seal of Suffolk Coastal District Council was affixed in the presence of;

Ian S de Prez

……..
Authorised Officer

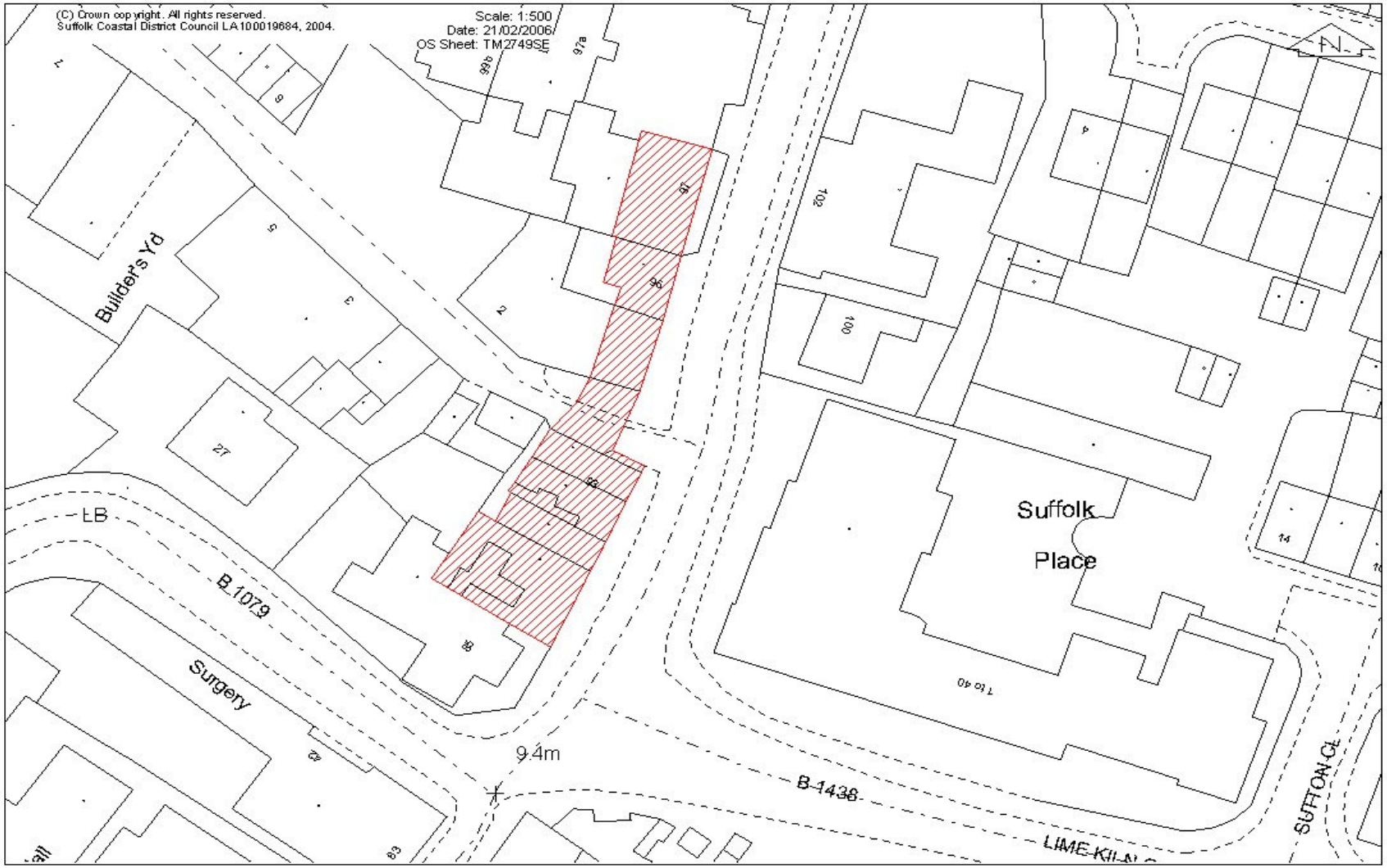
And

Simon Burridge

…… **CS** 9281
Authorised Officer

Dated: 3rd March 2006

THE SUFFOLK COASTAL DISTRICT COUNCIL AIR QUALITY MANAGEMENT AREA ORDER NO 1, 2006



Appendix B:
AQMA Order – Ferry Lane, Felixstowe

Environment Protection Act 1995, Part IV section 83(1)
Suffolk Coastal District Council

Air Quality Management Area Order

THE SUFFOLK COASTAL DISTRICT COUNCIL AIR QUALITY MANAGEMENT AREA ORDER NO 2, 2009

Suffolk Coastal District Council, in exercise of the powers conferred upon it by Section 83(1) of the
Environment Act 1995, hereby makes the following Order

This Order may be referred to as
'**The Suffolk Coastal District Council Air Quality Management Area Order No 2, 2009',**

and shall come into effect on the **1st May 2009**
The area shown on the attached map hatched in red is to be designated as an air quality management area (the designated area).

The designated area contains the property known as The Dooley Inn, situated at Ferry Lane, Felixstowe, Suffolk.

The map may be viewed at the Council Offices, at Melton Hill, Woodbridge, between the hours of
08.45am to 5.15pm Mondays to Thursdays and 08.45am to 4.45pm on Fridays.

This Area is designated in relation to a likely breach of the nitrogen dioxide (annual mean) objective as specified in the Air Quality Regulations (England) (Wales) 2000.

This order shall remain in force until it is varied or revoked by a subsequent order.
Dated; this Twenty-third day of April 2009

The Common Seal of Suffolk Coastal District Council was affixed in the presence of;

Ian S de Prez
……..
Authorised Officer

And

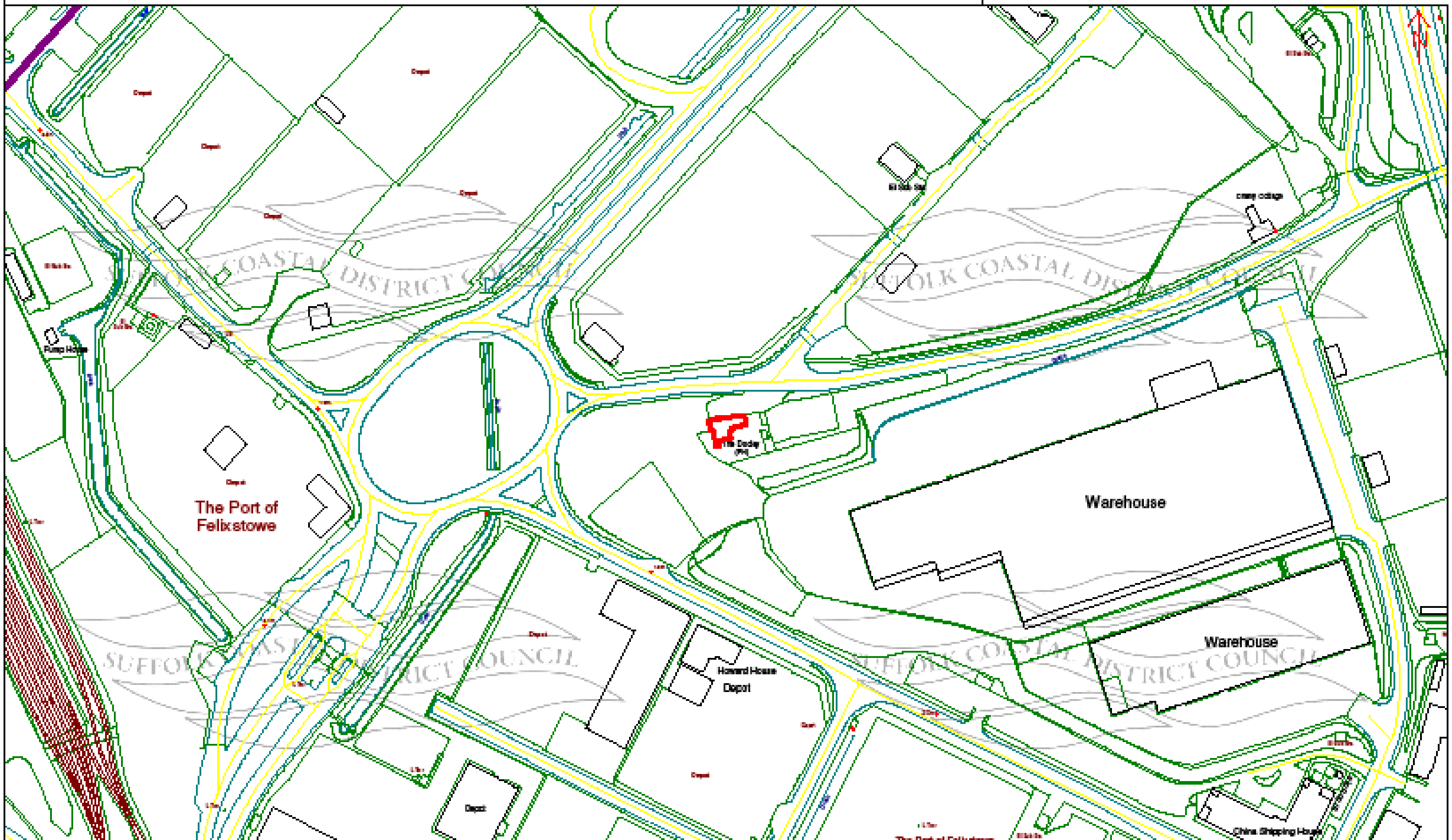
Simon Burridge
…… **CS** 9281
Authorised Officer

Dated 23rd April 2009

Dooley Inn, Ferry Lane, Felixstowe

Scale
0 25 50 75 100 125 m

Map produced on 29 April 2009 at 11:18



Suffolk Coastal District Council

Appendix C: QA:QC Data

Diffusion Tube Bias Adjustment Factors

The analytical laboratory used for supply and analysis of NO_2 diffusion tubes is Harwell Scientifics. The monitoring is undertaken using Palmes passive diffusion tubes exposed on a monthly basis. The tubes are prepared by spiking acetone:triethanloamine (TEA) (50:50) onto the grids prior to the tubes being assembled. The tubes are then desorbed with distilled water and the extract analysed using a segmented flow auto-analyser with ultraviolet detection. The laboratory is formally accredited under the United Kingdom Accreditation Scheme (UKAS).

The bias adjustment factor for Harwell Scientifics in 2009 was obtained from the Review and Assessment Help desk 'National Spreadsheet of Bias Adjustment Factors v.02/10'. This was calculated as **0.82**, using results from 9 different sites.

Factors from Local Co-location Studies (if available)

Woodbridge

Kerbside monitoring site recording NO_2 concentrations derived from road traffic emissions at the junction of Lime Kiln Quay Road, Thoroughfare, and St. John's Street in Woodbridge. The site is approximately 1 metre from the kerb and 14 metres from the traffic lights at the junction. This area of the junction is very narrow and enclosed by tall buildings, creating a canyon effect.

The bias correction factor was calculated using the Precision and Accuracy Spreadsheet provided by the UK Air Quality Archive.

NOx analyser annual mean (2008) = 45 µg/m^3 with 96% data capture
Triplicate diffusion tube mean (2008) = 50 µg/m^3 with Precision of 4
Bias correction factor (2008) = 0.9

Felixstowe

Industrial / Roadside monitoring site recording NO_2 concentrations derived from activities on and associated with the Port of Felixstowe and Dock Gate 2 roundabout. Site is approximately 75m from Dock Gate 2 roundabout and 130m from the Port of Felixstowe boundary.

The bias correction factor was calculated using the Precision and Accuracy Spreadsheet provided by the UK Air Quality Archive.

NOx analyser annual mean (2008) = 46 µg/m^3 with 97% data capture
Triplicate diffusion tube mean (2008) = 52 µg/m^3 with Precision of 6
Bias correction factor (2008) = 0.88

Discussion of Choice of Factor to Use

The local bias correction factor obtained for the Woodbridge co-location study (0.9) has been used to adjust all diffusion tubes sited within Woodbridge. As this location is unusual in character, being a street canyon, this bias correction factor has not been used to correct any

other diffusion tube locations within the district. The use of this factor is conservative for the Woodbridge monitoring locations.

The local bias correction factor obtained for the Dooley Inn, Ferry Lane, Felixstowe site (0.88) has been used to adjust the two diffusion tube sites at the Dooley Inn. Historic monitoring information has determined that the bias correction factor obtained for this site is not relevant to other locations in Felixstowe or the Suffolk Coastal district, and it has therefore not been used to adjust any other diffusion tube sites for bias.

All other diffusion tube monitoring sites within Felixstowe and the sites within Kesgrave, Melton and Martlesham have been adjusted for bias using the analytical laboratory factor of 0.82.

Bias adjustment of the annual mean diffusion tube result for all sites is shown in Appendix E.

Short-term to Long-term Data adjustment

The new triplicate diffusion tube site at Martlesham (MRT 1) only collected 8 months of data during 2009 (29th April 2009 to 29th December 2009). LAQM.TG(09) provides a method of estimating the long term annual mean from short term monitoring data (box 3.2). This method has been applied to obtain the estimated annual mean for the Martlesham 1 site, as follows:

- Identify 2-4 nearby, long term, continuous monitoring sites, ideally those forming part of the national network. These should be background sites to avoid any very local effects that may occur, and should wherever possible lie within a radius of about 50 miles.
  The 2 sites we have used are St. Osyth (Rural) and Wicken Fen (Rural). Both sites are part of the UK Automatic Urban and Rural Network (AURN).
- Obtain the annual mean (Am) for the calendar year for these sites. As this calculation is to estimate the annual mean for a diffusion tube site, the diffusion tube calendar year for 2009 for the Martlesham site was 9 January to 29 December, see table below.
- Work out the period mean (Pm) for the period of interest, in this case 29 April to 29 December 2009, see table below.
- Calculate the Ratio (R) of the annual mean to the period mean (Am ÷ Pm) for each location, see table below.
- Calculate the average of these ratios (R_a). This is the adjustment factor, see table below.

Site Identification	Site Type	Annual Mean 2009 (Am)	Period Mean 2009 (Pm)	Ratio (R) (Am ÷ Pm)
St. Osyth	Rural (AURN)	11.6 µg/m^3	9.6 µg/m^3	1.208
Wicken Fen	Rural (AURN)	11.5 µg/m^3	9.4 µg/m^3	1.223
			Average (R_a)	**1.216**

- Multiply the measured period mean concentration (M) for the short term monitoring location by the adjustment factor (R_a) to give the estimate of the annual mean for 2009:

  24 µg/m^3 (M) x 1.126 (R_a) = **29 µg/m^3**

QA/QC of automatic monitoring

NO_2 concentrations were monitored at both continuous analyser sites by ozone chemiluminescence. Quality assurance of the data from the continuous monitoring stations was carried out by AEA Energy and Environment following the same procedures used for sites within the Government's Automatic Urban and Rural Network. Calibrations were undertaken fortnightly by a Council Officer, the procedures adopted for the calibrations were modelled on those developed by AEA Energy & Environment for use in the national monitoring networks. The calibrations were undertaken using certified calibration gas provided by Air Liquide UK Limited with traceability to National Metrology Standards obtained via regular UKAS Quality Control Audits carried out by AEA Energy & Environment. The audits provide a range of information that is utilised within the data management process for the data sets.

Audit tests undertaken include accredited audit zero and span calibrations, linearity, NO_x converter efficiency, flow and leak checks as well as checks of the instruments sampling system. Data presented in this report have been fully ratified by AEA Technology. The ratified data reports are included in Appendix.

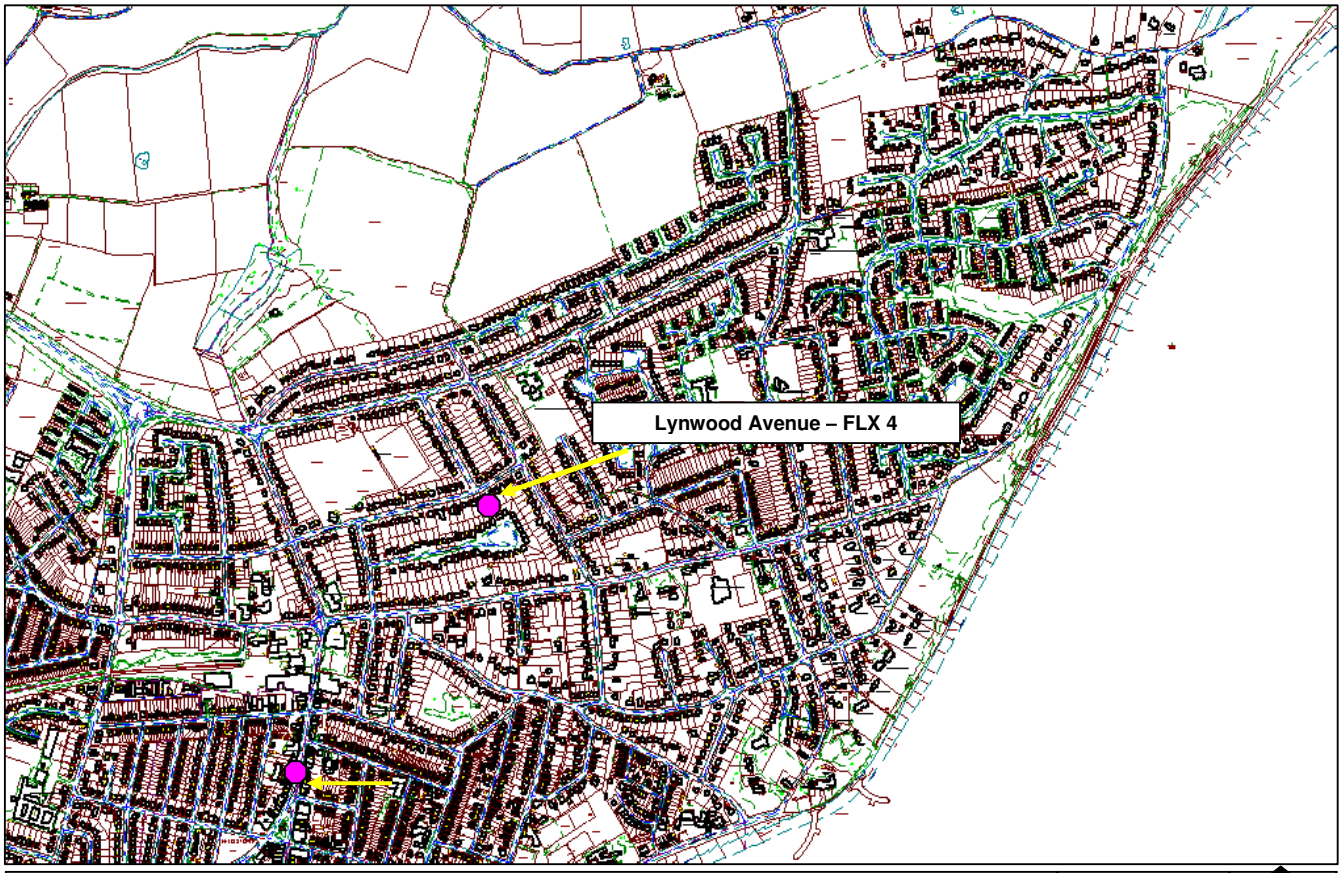
The data sets were screened, scaled and validated using all available routine site calibrations, audit results and service engineer records. This was an ongoing process with checks made daily to ensure high data capture is achieved. A final process of data ratification ensures that the data provide the most accurate record of the pollution concentrations across the measurement period. The data management process adopted is that evolved and implemented by AEA Energy & Environment within the data management programme of the AURN UK national monitoring network. This process is expected to deliver data sets that meet the EU Data Quality Objective of a measurement uncertainty of better than 15%.

QA/QC of diffusion tube monitoring

The analysis of NO_2 diffusion tubes by Harwell Scientifics meets the guidelines set out in Defra's 'Diffusion tubes for Ambient NO_2 Monitoring: Practical Guidance'. They participate in the Workplace Analysis Scheme for Proficiency (WASP) for analysis of diffusion tubes. This is an inter laboratory comparison study for analysing spiked NO_2 diffusion tubes and the results show that Harwell Scientifics was ranked as a **Category Good** laboratory in 2009.

Appendix D:
Maps showing NO_2 diffusion tube locations

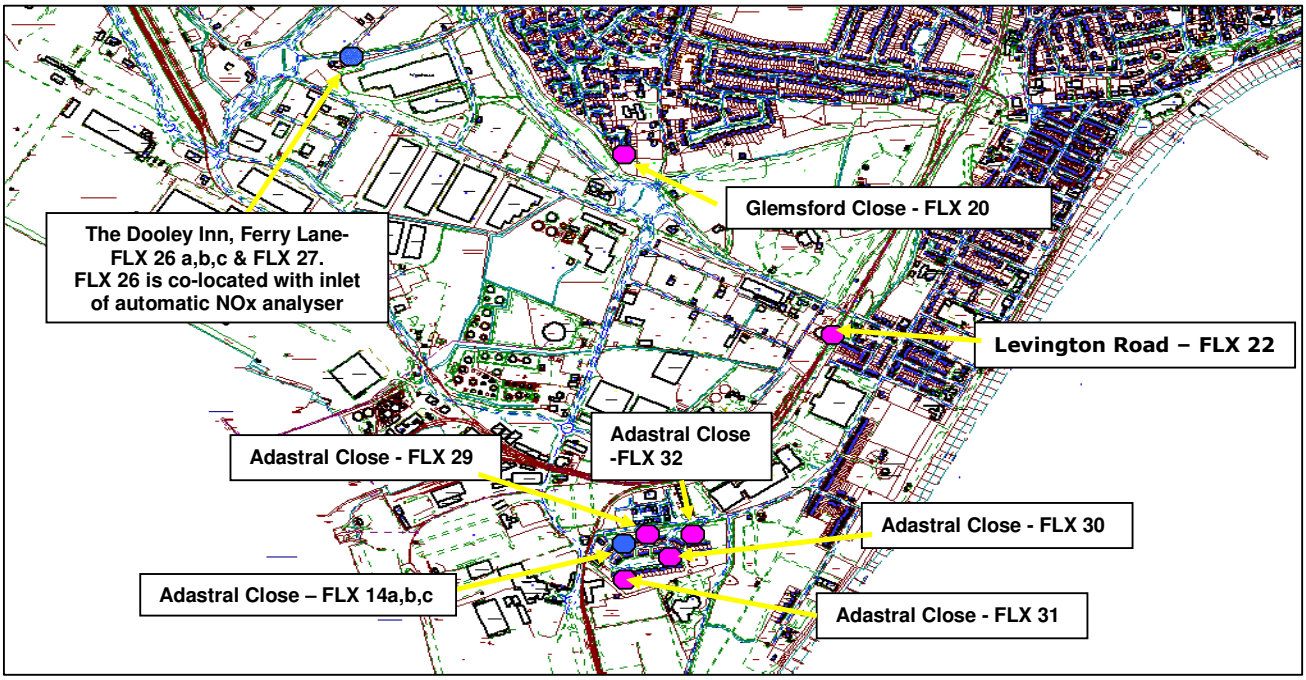
NO_2 diffusion tube locations in Felixstowe



Not to Scale

N

Single diffusion tube site



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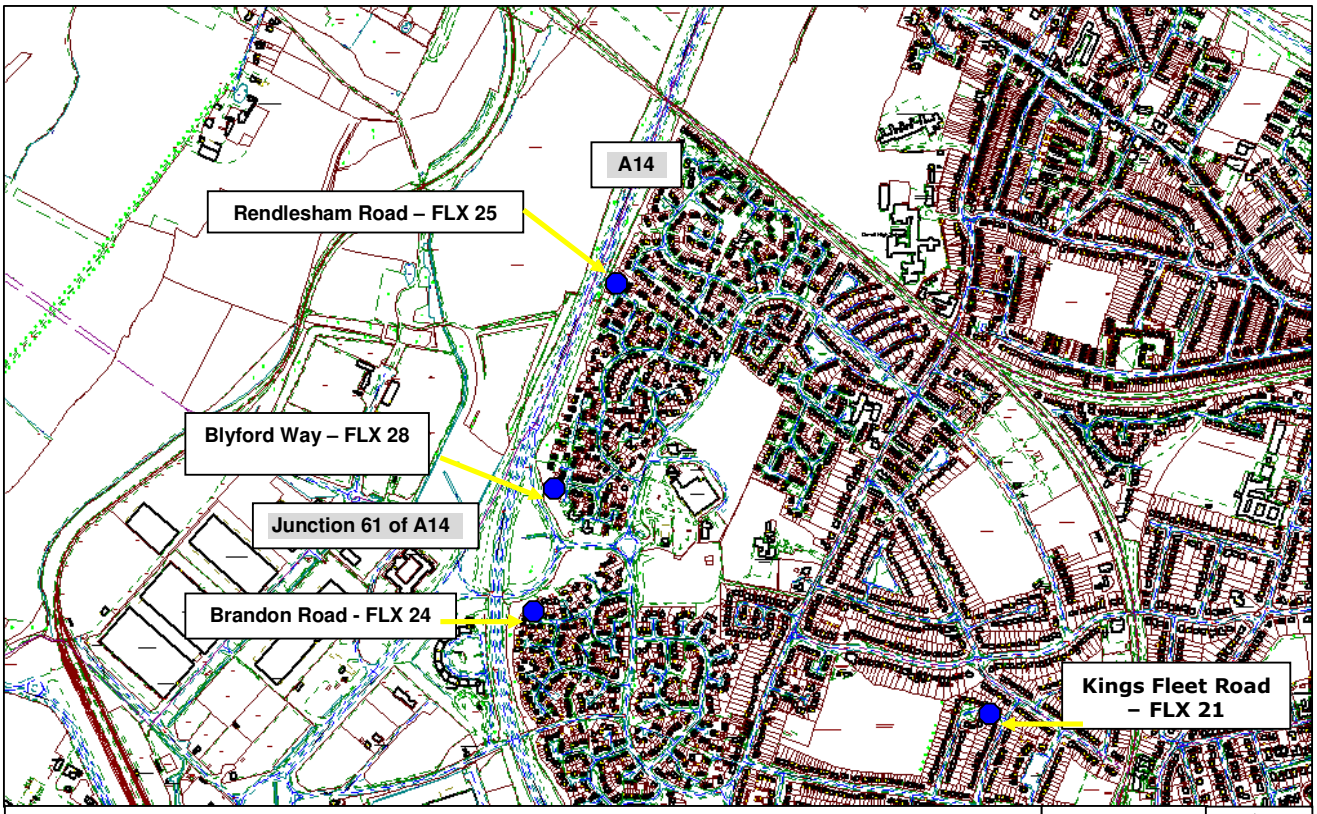
Single Diffusion Tube Site Triplicate Diffusion Tube Site



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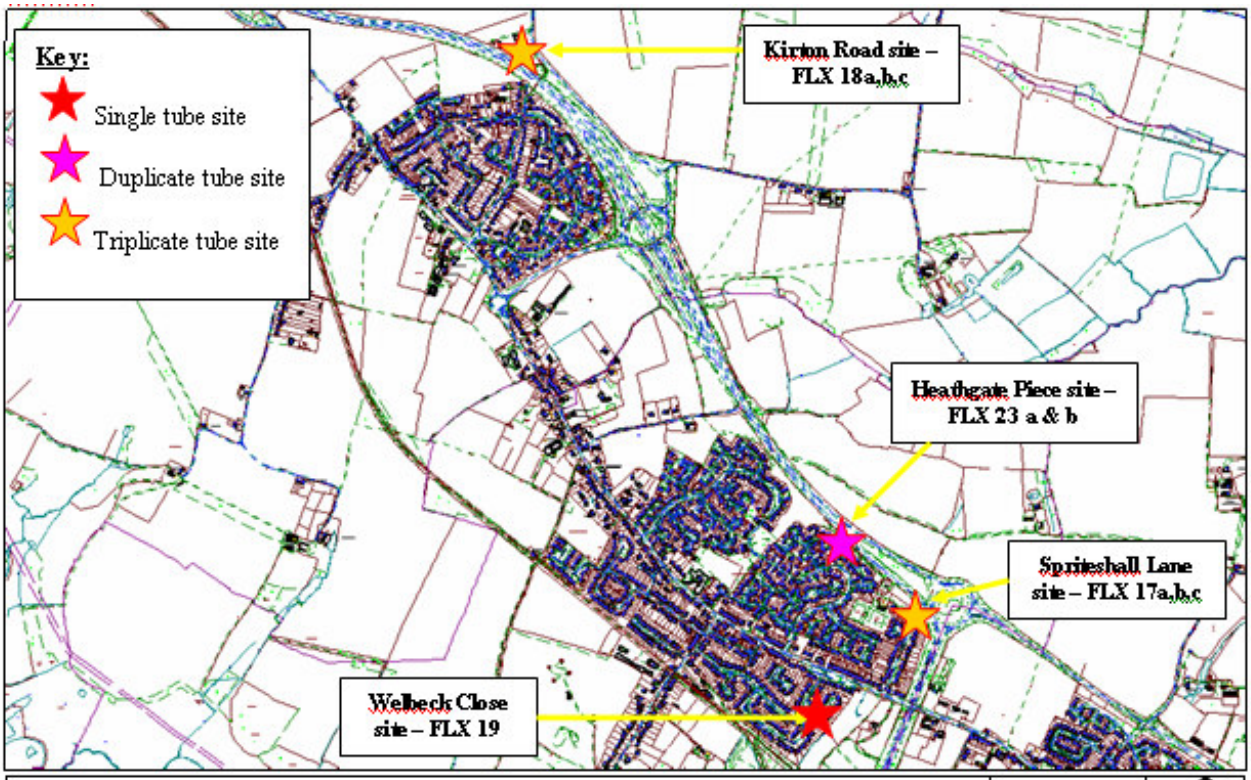

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Not to scale

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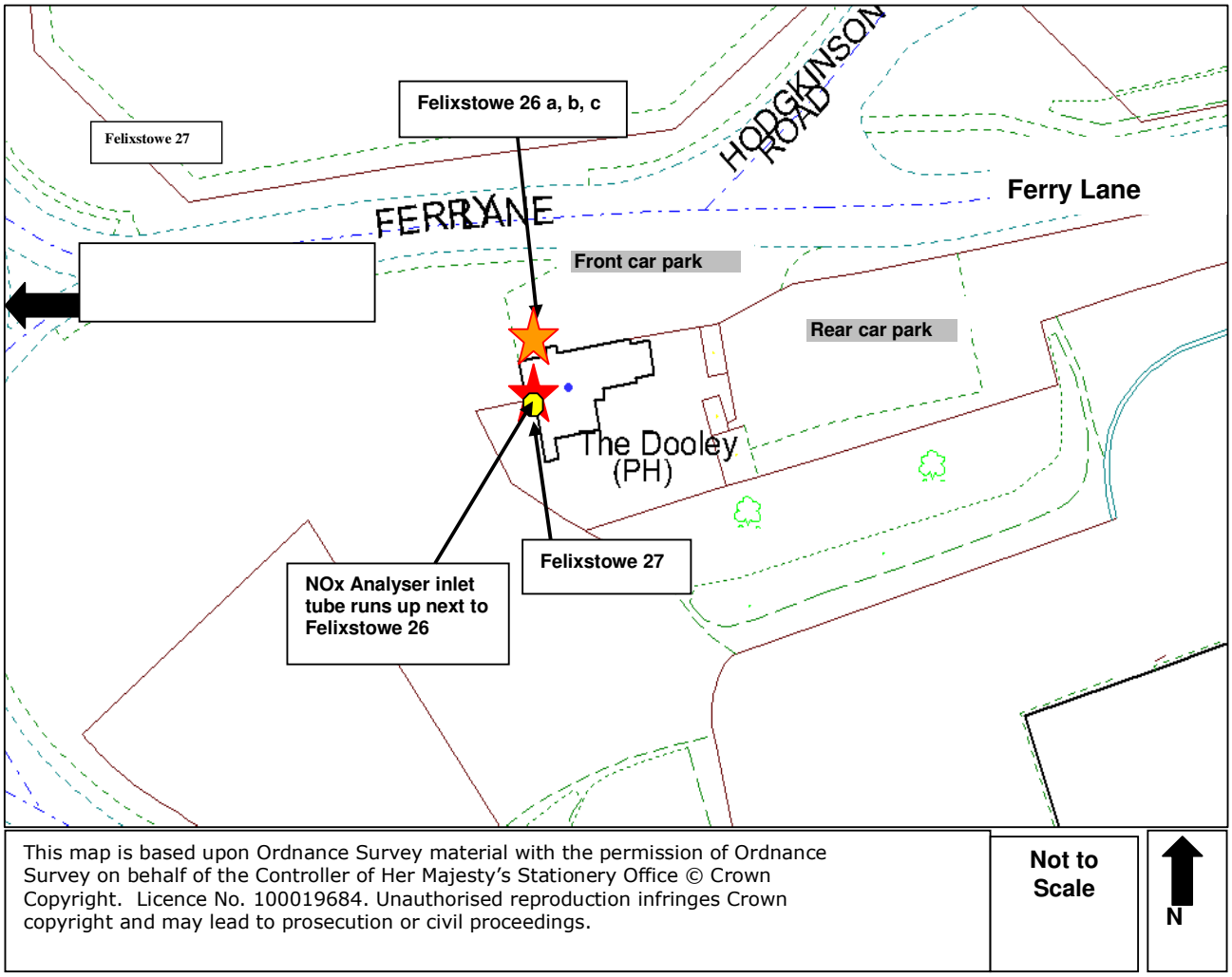
N

K



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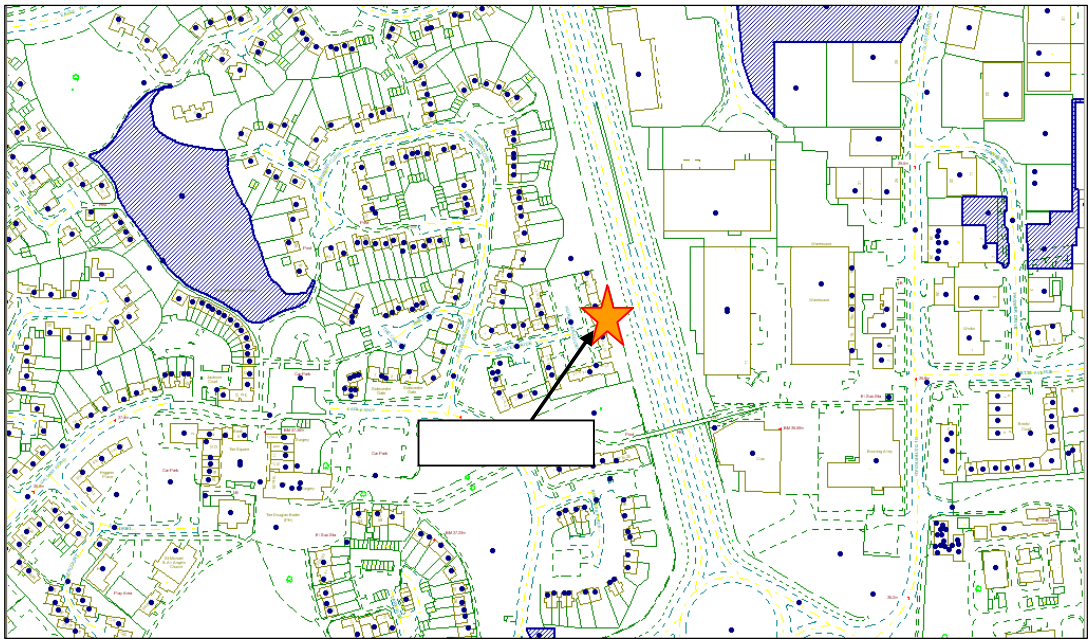
Single diffusion tube location

Triplicate diffusion tube location

No_x Analyser Location

NO_2 diffusion tube location in Martlesham



Single diffusion tube location

Appendix E:
NO_x Analyser results summaries

SUFFOLK COASTAL WOODBRIDGE 2
01 January to 31 December 2009

These data have been fully ratified by AEA

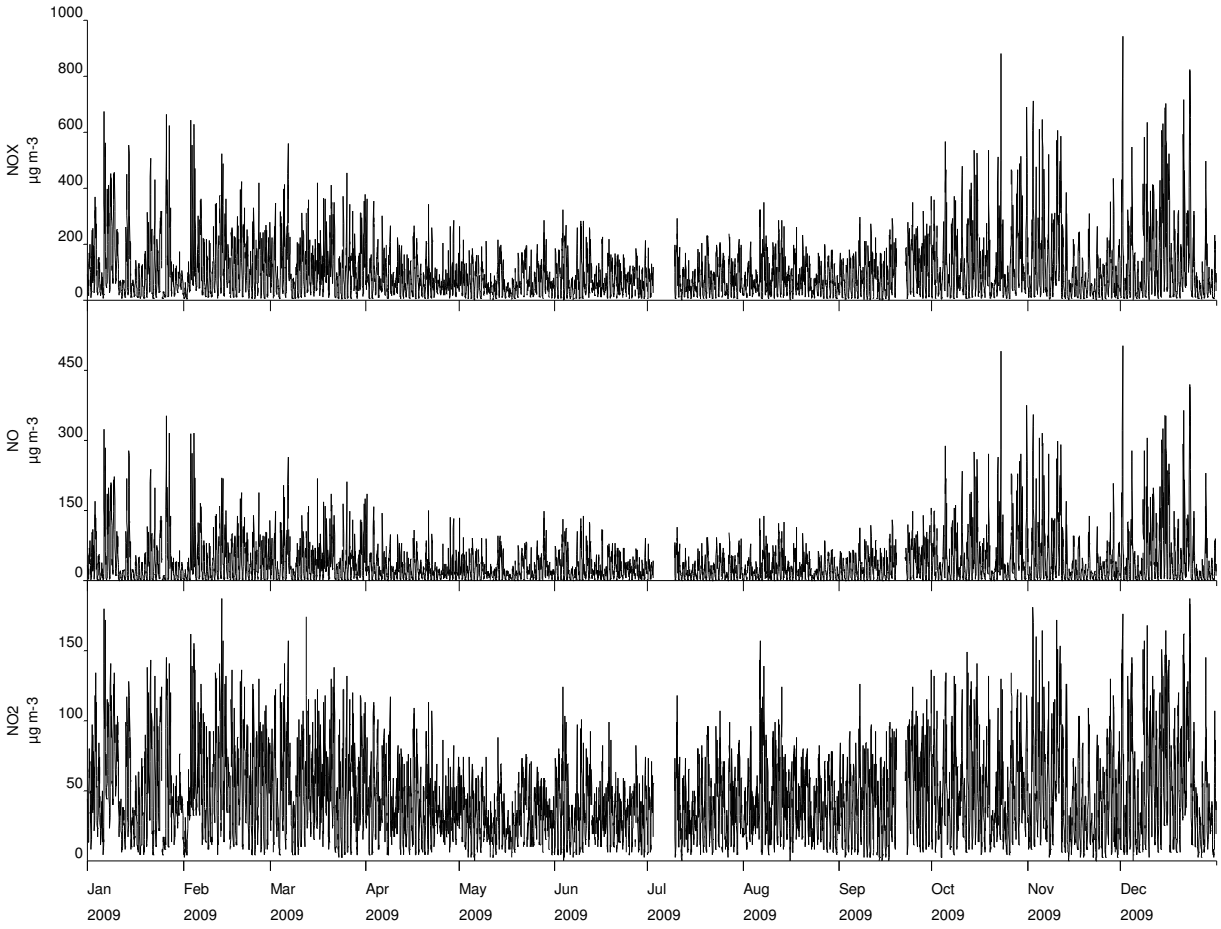
POLLUTANT	NO_X	NO	NO_2
Number Very High	-	-	0
Number High	-	-	0
Number Moderate	-	-	0
Number Low	-	-	8416
Maximum 15-minute mean	1099 µg m^{-3}	609 µg m^{-3}	311 µg m^{-3}
Maximum hourly mean	944 µg m^{-3}	503 µg m^{-3}	187 µg m^{-3}
Maximum running 8-hour mean	694 µg m^{-3}	347 µg m^{-3}	163 µg m^{-3}
Maximum running 24-hour mean	391 µg m^{-3}	179 µg m^{-3}	117 µg m^{-3}
Maximum daily mean	328 µg m^{-3}	151 µg m^{-3}	97 µg m^{-3}
Average	103 µg m^{-3}	38 µg m^{-3}	45 µg m^{-3}
Data capture	96.1 %	96.1 %	96.1 %

All mass units are at 20'C and 1013mb
NO_X mass units are NO_X as NO_2 µg m-3

Pollutant	Air Quality (England) Regulations 2000 and (Amendment) Regulations 2002	Exceedences	Days
Nitrogen Dioxide	Annual mean > 40 µg m^{-3}	1	-
Nitrogen Dioxide	Hourly mean > 200 µg m^{-3}	0	0

Produced by AEA on behalf of Suffolk Coastal District Council

Suffolk Coastal Woodbridge 2 Air Monitoring
Hourly Mean Data for 01 January to 31 December 2009



FELIXSTOWE DOOLEY
01 January to 31 December 2009

These data have been fully ratified by AEA

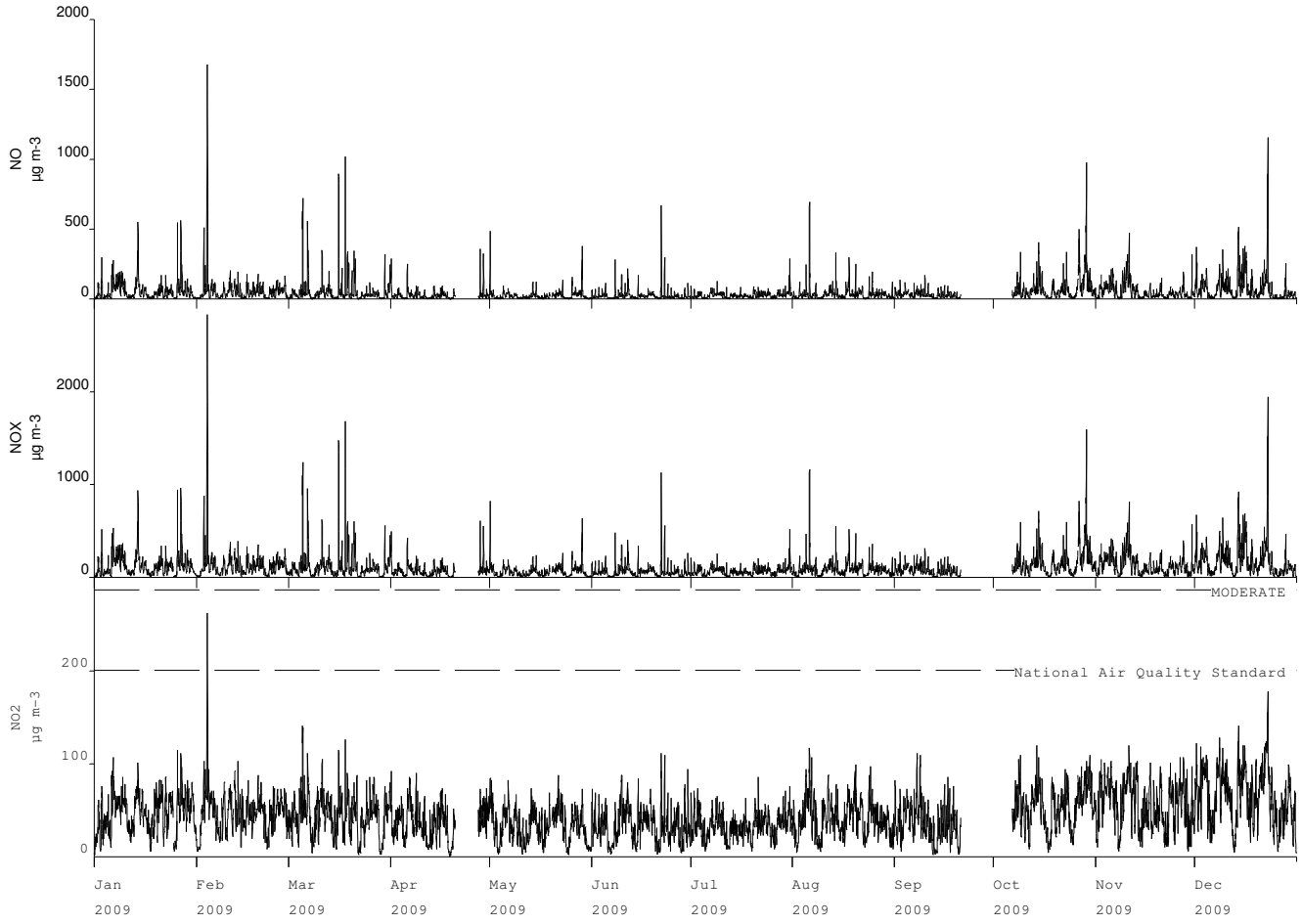
POLLUTANT	NO	NO_X	NO_2
Number Very High	-	-	0
Number High	-	-	0
Number Moderate	-	-	0
Number Low	-	-	8143
Maximum 15-minute mean	2055 µg m^{-3}	3442 µg m^{-3}	323 µg m^{-3}
Maximum hourly mean	1678 µg m^{-3}	2825 µg m^{-3}	262 µg m^{-3}
Maximum running 8-hour mean	911 µg m^{-3}	1554 µg m^{-3}	165 µg m^{-3}
Maximum running 24-hour mean	363 µg m^{-3}	656 µg m^{-3}	123 µg m^{-3}
Maximum daily mean	339 µg m^{-3}	617 µg m^{-3}	104 µg m^{-3}
Average	43 µg m^{-3}	109 µg m^{-3}	44 µg m^{-3}
Data capture	93.0 %	93.0 %	93.0 %

All mass units are at 20'C and 1013mb
NO_X mass units are NO_X as NO_2 µg m-3

Pollutant	Air Quality (England) Regulations 2000 and (Amendment) Regulations 2002	Exceedences	Days
Nitrogen Dioxide	Annual mean > 40 µg m^{-3}	1	-
Nitrogen Dioxide	Hourly mean > 200 µg m^{-3}	3	1

Produced by AEA on behalf of Suffolk Coastal DC

Felixstowe Dooley Air Monitoring
Hourly Mean Data for 01 January to 31 December 2009



Appendix F: NO_2 Diffusion Tube Results 2009

Monthly and annual mean nitrogen dioxide (NO_2) concentrations recorded at sites in Felixstowe during 2009, figures in micrograms per cubic metre (µg/m^3). Annual mean concentration corrected for bias where relevant

Site	Time in months												Annual mean (µg/m^3)	Bias correction factor used	Bias corrected annual mean (µg/m^3)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
FLX 4	51.4	24.6	34.3	27.5	16.4	16.3	18.9	20.4	16.1	32	27.7	35.9	**26.8**	**0.82**	**22**
FLX 12	47.1	49.5	44.7	38.5	126.8	26.2	No data	27.5	27.2	43.1	35	43.4	**46.3**	**0.82**	**38**
FLX 14a	39.3	49.3	44.3	26.8	20.2	22.5	27.6	27.6	27.8	34.6	31.1	40	see FLX 14 mean	~	~
FLX 14b	42.1	58.3	37.4	30.2	23.9	20.6	25.6	31.1	35.6	61.9	16.2	33.8	see FLX 14 mean	~	~
FLX 14c	44.6	60.0	37.5	33.7	19.7	27.9	Missing	24.5	22.0	44.1	27.6	45.5	see FLX 14 mean	~	~
FLX 14 a,b,c - mean	42.0	55.9	39.7	30.2	21.3	23.7	26.6	27.7	28.5	46.9	25.0	39.8	**33.9**	**0.82**	**28**
FLX 17a	39.7	36.6	38.1	39.8	23.4	28.7	no data	28.6	23.1	35.3	36.3	39	see FLX 17 mean	~	~
FLX 17b	47.7	37.1	36.9	34.7	25.3	27.0	24.9	24.4	23.1	37.8	37.1	39.5	see FLX 17 mean	~	~
FLX 17c	48.4	37.6	34.4	39.6	21.8	Missing	26.1	25.1	26.2	37.5	34.4	37.9	see FLX 17 mean	~	~
FLX 17 a,b,c - mean	45.3	37.1	36.5	38.0	23.5	27.9	25.5	26.0	24.1	36.9	35.9	38.8	**33.0**	**0.82**	**27**
FLX 18a	56	41.6	48.9	30	19.0	20.6	33.6	23.6	23.5	36.8	40.3	44	see FLX 18 mean	~	~
FLX 18b	61.7	41.7	35.8	34.5	18.4	18.4	31.0	27.3	22.4	36.4	41.8	45	see FLX 18 mean	~	~
FLX 18c	55.8	40.3	42.4	34.3	19.9	20.7	31.0	28.9	28.5	37.9	43.3	33.8	see FLX 18 mean	~	~
FLX 18 a,b,c - mean	57.8	41.2	48.9	32.9	19.1	19.9	31.9	26.6	24.8	37.0	41.8	40.9	**35.2**	**0.82**	**29**
FLX 19	53.3	38.4	27.2	25.7	16.4	20.5	26.2	25.4	22.9	36	38.2	22.4	**29.4**	**0.82**	**24**
FLX 20	39.7	40.2	39.6	27.8	19.4	19.6	30.5	20.2	26.3	34.5	30	37.4	**30.4**	**0.82**	**25**
FLX 21	38.3	43.4	38.1	30.9	16.3	20.8	24.7	23.3	24.0	33.7	32	36.2	**30.1**	**0.82**	**25**
FLX 22	42.1	45.2	35.9	29.7	20.3	22	24.4	23.4	22.4	40.2	31.3	34.6	**31.0**	**0.82**	**25**
FLX 23a	45.6	36.9	37.7	46.9	24	40.1	25.7	27.3	34.7	37.9	36.6	36.9	see FLX 23 mean	~	~
FLX 23b	47.5	37.8	39	41.8	28.9	42.1	18.3	25.7	33.3	39.9	31.2	40.8	see FLX 23 mean	~	~
FLX 23 a,b - mean	46.6	37.4	38.4	44.4	26.5	41.1	22.0	26.5	34.0	38.9	33.9	38.85	**35.7**	**0.82**	**29**
FLX 24	43.4	50	49.4	34	25.1	22.2	33.7	36.2	31.2	41.7	42	44.9	**37.8**	**0.82**	**31**
FLX 25	44.9	44.7	46.5	35.1	28.5	25.5	37.7	35.3	18.2	36.7	46.4	40.8	**36.7**	**0.82**	**30**
FLX 26a	47.4	59.6	56.7	55	41.7	48.0	45.5	53.1	43.3	55.1	51.2	54.1	See FLX 26 Mean	~	
FLX 26b	58.5	61.4	57.6	51.2	38.6	50.0	48.8	49.9	50.8	52.9	47.4	57.8	See FLX 26 Mean	~	
FLX 26c	57.6	63.8	54.4	45	43.1	41.9	46.5	47.6	50.9	56.9	43	60.1	See FLX 26 Mean	~	
FLX 26 a,b,c - mean	54.5	61.6	56.2	50.4	41.1	46.6	46.9	50.2	48.3	55.0	47.2	57.3	**51.3**	**0.88**	**45**
FLX 27	54.1	54.7	53.4	43.3	33.2	34.7	37.7	38.8	38.0	35.6	45.9	51.7	**43.4**	**0.88**	**38**
FLX 28	95	39.7	48.3	35.3	29.7	23.8	34.3	34.1	32.6	38.2	40.2	40	**40.9**	**0.82**	**34**
FLX 29	42.5	52.5	42.9	27.4	21.7	22.5	24.4	24.1	28.8	33.5	30.2	38.3	**32.4**	**0.82**	**27**
FLX 30	39.7	40.3	36.7	29.7	18.2	15.3	20.8	24.9	24.0	33.3	30.1	28	**28.4**	**0.82**	**23**
FLX 31	47.7	48.5	36.6	33.9	23.8	23.7	29.0	26.3	26.7	37.9	37	35.3	**33.9**	**0.82**	**28**
FLX 32	34.3	46.7	38.0	31.4	20.7	19.9	21.4	28.8	22.1	36.6	30.3	37.1	**30.6**	**0.82**	**25**

Key:		
	FLX 4	Urban Background site, lampost outside 37 Lynwood Avenue, Felixstowe
	FLX 12	Roadside site, drainpipe at 119 Hamilton Road, 'Ford Bros. Bike Shop' Felixstowe
	FLX 14 a,b,c	Industrial site, drainpipe on 1 Adastral Close, Felixstowe. **(Triplicate site)**
	FLX 17 a,b,c	Roadside site, drainpipe on 38 Spriteshall Lane, Trimley St. Mary. **(Triplicate site).**
	FLX 18 a,b,c	Roadside site, lampost at 67 Kirton Road, Trimley St. Martin. **(Triplicate site).** **N.B site moved from lampost to telegraph pole from September 2008**
	FLX 19	Urban Background site, lampost at 4 Welbeck Close, Trimley St. Mary.
	FLX 20	Industrial/Roadside site, rear garden of 73 Glemsford Close, Felixstowe
	FLX 21	Urban Background site, lampost at 4 Kings Fleet Road, Felixstowe
	FLX 22	Industrial site, drainpipe on 13 Levington Road, Felixstowe
	FLX 23 a,b	Roadside site, drainpipe on 23 Heathgate Piece, Trimley St. Mary. **(Duplicate site)**
	FLX 24	Roadside site, rear garden of 22 Brandon Road, Felixstowe
	FLX 25	Roadside site, drainpipe on 46 Rendlesham Road, Felixstowe
	FLX 26 a,b,c	Industrial/Roadside site, first floor window over front car park at The Dooley Inn, Ferry Lane, Felixstowe. **(Triplicate site co-located with continuous analyser)**
	FLX 27	Industrial/Roadside site, first floor front window facing the Docks at The Dooley Inn, Ferry Lane, Felixstowe
	FLX 28	Roadside site, rear garden of 63 Blyford Way, Felixstowe
	FLX 29	Industrial Site, 18 Adastral Close, Felixstowe
	FLX 30	Industrial Site, 39 Adastral Close, Felixstowe
	FLX 31	Industrial Site, 44 Adastral Close, Felixstowe
	FLX 32	Industrial Site, 64 Adastral Close, Felixstowe

Monthly and annual mean nitrogen dioxide (NO_2) concentrations recorded at sites in Kesgrave during 2009, figures in micrograms per cubic metre ($\mu g/m^3$). Annual mean concentration corrected for bias where relevant

Site	Time in months												Annual mean ($\mu g/m^3$)	Bias correction factor used	Bias corrected annual mean ($\mu g/m^3$)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
KSG 4	32.2	26.6	25.3	19.3	12.7	11.4	14.4	15.6	13.8	24.3	22.2	26.9	**20.4**	**0.82**	**17**
KSG 6	37.0	42.2	40.2	33.4	24.5	28.6	21.4	23.2	29	38.7	29.7	31	**31.6**	**0.82**	**26**
KSG 9	62.4	36	50.2	34.8	23.6	31.3	40.4	33.3	26.3	45.1	47.9	55.4	**40.6**	**0.82**	**33**

Key:

KSG 4 Urban Background site, Kesgrave High School, Main Road, Kesgrave

KSG 6 Roadside site, All Saints Church / The Bell Inn, Main Road, Kesgrave.

KSG 9 Roadside site, roadside lampost at 118 Main Road, Kesgrave

Monthly and annual mean nitrogen dioxide (NO_2) concentrations recorded at sites in Martlesham during 2009, figures in micrograms per cubic metre ($\mu g/m^3$).
Annual mean concentration corrected for bias where relevant.

Site	Time in months												Annual mean ($\mu g/m^3$)	Bias correction factor used	Bias corrected annual mean ($\mu g/m^3$)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
MRT 1a					21.5	30.7	27.9	27.8	25.0	32.1	34.5	34.2	see MRT 1 mean	~	~
MRT 1b					26.4	31.6	25	25.4	26.9	36.8	35	37.1	see MRT 1 mean	~	~
MRT 1c					26.1	19.3	23.9	21.8	29.1	36.6	36.2	35.1	see MRT 1 mean	~	~
MRT 1a,b, c-Mean					24.7	27.2	25.6	25.0	27.0	35.2	35.2	35.5	**29.4**	**0.82**	**24**

Key:
MRT 1a,b,c Site located on drainpipe behind Horseman court, off Eagle Way, Martlesham. **(Triplicate Site)**
New Site as of May 2009

Diffusion tube annual mean data is ratified to improve accuracy. The bias adjustment factor for the diffusion tubes must either be obtained from the analyst laboratory or calculated from a co-location study with a continuous analyser by the authority themselves. The laboratory bias for Harwell of 0.82 was used to correct the Martlesham sites.

Monthly and annual mean nitrogen dioxide (NO_2) concentrations recorded at sites in Woodbridge during 2009, figures in micrograms per cubic metre ($\mu g/m^3$). Annual mean concentration corrected for bias where relevant

Site	Time in months												Annual mean ($\mu g/m^3$)	Bias correction factor used	Bias corrected annual mean ($\mu g/m^3$)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
WBG 1a	54.1	59.4	57.4	49.0	42.4	48.6	42.6	43.1	44	53.7	48.1	58.3	see WBG 1 mean	~	~
WBG 1b	56.1	53.3	58.2	45.2	41.7	47.0	40.9	39.2	40.7	51.4	51.3	61.6	see WBG 1 mean	~	~
WBG 1c	55.5	60.0	58.5	45.9	42.3	47.5	41.7	44.0	43.2	53.2	53.2	53.9	see WBG 1 mean	~	~
WBG 1 a,b,c - mean	55.2	57.6	58.0	46.7	42.1	47.7	41.7	42.1	42.6	52.8	50.9	57.9	**49.6**	**0.9**	**45**
WBG 3	28.4	19.7	12.4	Missing	8.7	16.1	11.7	11.2	9.9	23.4	19.2	27.3	**17.1**	**0.9**	**15**
WBG 5a	44.3	32.2	32.9	36.5	18.1	31.4	21.5	21.6	28.9	33.9	31.5	17.4	see WBG 5 mean	~	~
WBG 5b	33.4	38	35.9	39.5	25.0	26.6	21.3	25.5	28.8	32.8	29.9	42.9	see WBG 5 mean	~	~
WBG 5c	36.5	40.1	36	35.9	24.3	29.8	17.3	25.2	28.3	34.3	30.7	39.6	see WBG 5 mean	~	~
WBG 5 a,b,c - mean	38.1	36.8	34.9	37.3	22.5	29.3	20.0	24.1	28.7	33.7	30.7	33.3	**30.8**	**0.9**	**28**
WBG 6	48.6	57.1	53.8	41.3	36.8	42.4	37.9	29	42.6	51.3	46	55	**45.2**	**0.9**	**41**
WBG 8	57.8	61.3	48.2	49.9	28.3	44.7	35.4	32.1	40.6	50.7	51.4	55.8	**46.4**	**0.9**	**42**
WBG 10	47.1	43.5	37.3	47.7	29.2	46.4	24.7	16.8		38.9	35.4	46.1	**37.6**	**0.9**	**34**
WBG 12	43.7	40.8	40.5	28.4	18	19.2	12.9	21.5	24.3	26.8	34.4	37.9	**29.0**	**0.9**	**26**
WBG 13	51.4	50.2	46.3	44.2	30.1	35.9	26.4	19.1	26.6	32.5	39.7	50.1	**37.7**	**0.9**	**34**
WBG 15	Missing	60.6	49.1	43.6	28.8	42.3	36.0	23.3	32.5	48	44.5	56.1	**42.3**	**0.9**	**38**
WBG 17	46.1	36.5	37.8	44.6	22.3	35.5	26.3	28.3	29.2	36	35.4	40.8	**34.9**	**0.9**	**31**
WBG 18	55.1	43.3	45.4	49.1	34.1	43.1	31.3	34.1	31.6	44.5	43.6	51.2	**42.2**	**0.9**	**38**
WBG 20	53	57.3	55.1	43.9	30.2	31.6	39.5	19.2	32.3	48	48.2	54.6	**42.7**	**0.9**	**38**
WBG 21	30.3	30.2	26.8	24.8	8.7	17.9	14.7	13.5	20.1	21.5	30.2	32.2	**22.6**	**0.9**	**20**
WBG 22	34.2	33.1	26.3	30.2	18.2	22	17.0	11.3	28.2	29.6	28.3	36.1	**26.2**	**0.9**	**24**
WBG 23	31.1	37	37.2	33.5	21.4	26.3	27.2	27.9	22.5	37.6	36.6	41.9	**31.7**	**0.9**	**29**

Key:

WBG 1a,b,c	Kerbside site, signpost outside 93 Thoroughfare, Woodbridge **(Triplicate site co-located with continuous analyser)**
WBG 3	Urban Background site, lampost outside 8 Kingston Farm Road, Woodbridge
WBG 5a,b,c	Roadside site, drainpipe on corner of Suffolk Place, Lime Kiln Quay Road, Woodbridge **(Triplicate site)**
WBG 6	Roadside site, drainpipe on 87 Thoroughfare, Woodbridge
WBG 8	Roadside site, drainpipe on 95 Thoroughfare, Woodbridge
WBG 10	Roadside site, signpost in St. John's Street (opposite Surgery), Woodbridge
WBG 12	Roadside site, drainpipe on 8 Lime Kiln Quay Road, Woodbridge.
WBG 13	Roadside site, traffic lights at front of 85 Thoroughfare, Woodbridge
WBG 15	Roadside site, Top guttering in middle of 87 Thoroughfare, Woodbridge
WBG 17	Roadside site, drainpipe at front Northern end of Suffolk Place, Lime Kiln Quay Road, Woodbridge
WBG 18	Roadside site, drainpipe between 106 / 108 Thoroughfare, Woodbridge
WBG 20	Roadside site, drainpipe on 97 Thoroughfare, Woodbridge
WBG 21	Roadside Site, drainpipe on the front of 27 St John Street, Woodbridge
WBG 22	Roadside Site, window ledge balcony on Suffolk Place facing the Lime Kiln Quay Road. **New Site from April 2008**
WBG 23	Roadside Site, lampost o/s new buildings (number 50), St Johns Street, Woodbridge. **New site from January 2009**

Appendix G: Environmental Permitting Regulations 2010 – process list

List of new processes since 2006 regulated under the Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended) within the Suffolk Coastal district, and indication of whether they are classed as a potentially significant emitter of any pollutant specified in LAQM.TG(03).

Name and address of authorised process	Authority issuing authorisation (Public Register file reference – where applicable)	Grid reference for process	Installation Activity Section number and Process Guidance (PG) note under which process is authorised	Process description
Waste Recycling Limited Foxhall Civic Amenity Site Foxhall Road Brightwell IPSWICH, Suffolk, IP10 0BJ	Suffolk Coastal District Council IPPC 26	2399 4390	Disposal of Waste Section 5.2	Part A1 Activity
Waste Recycling Limited Household Waste Site Foxhall Road Brightwell IPSWICH, Suffolk, IP10 0BJ	Suffolk Coastal District Council IPPC 27	2399 4390	Disposal of Waste Section 5.2	Part A1 Activity
Waste Recycling Limited Felixstowe Civic Amenity Site Carr Road FELIXSTOWE Suffolk IP11 8UT	Suffolk Coastal District Council IPPC 28	2898 3295	Disposal of Waste Section 5.2	Part A1 Activity
Waste Recycling Limited Leiston Civic Amenity Site Lovers Lane LEISTON Suffolk IP16 4UJ	Suffolk Coastal District Council IPPC 29	4554 6341	Disposal of Waste Section 5.2	Part A1 Activity
REG Bio-Power UK Ltd Unit F Building 89 Bentwaters Parks Rendlesham WOODBRIDGE, Suffolk, IP12 2TW	Suffolk Coastal District Council IPPC 30	3472 5351	Combustion Activity Section 1.1 A (1) (b) (iii)	Part A1 Activity