



2011 Air Quality Progress Report for South Norfolk District Council

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

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Executive Summary

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

South Norfolk District Council has recently undertaken the following rounds of Review and Assessment:

- Updating and Screening Assessment (2003)
- Progress Report (2004)
- Further Assessment (2005)
- Detailed Assessment (2006) and Updating and Screening Assessment (2006)
- Progress Report (2007)
- Progress Report (2008)
- Updating and Screening Assessment (2009)
- Progress Report (2010)

Conclusions from this report

There are no exceedences of any of the air quality objectives. Therefore, South Norfolk Council has concluded that there is no requirement to proceed to a Detailed Assessment for any sources assessed as part of this Progress Report.

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1 Introduction

1.1 Description of Local Authority Area

South Norfolk makes up over one sixth of the county of Norfolk and is part of East Anglia. It had an estimated population of over 117,000 people during 2007 in 90,771 hectares of predominantly low-relief countryside, with the edge of the Greater Norwich (the County City) agglomeration in the central north of the District. The greatest population centres are in the towns and parishes of Diss, Wymondham, Hethersett, Costessey, Long Stratton, Poringland, Loddon and Harleston.

South Norfolk contains some particularly precious environment in wildlife reserves, Sites of Special Scientific Interest (SSSI), and parts of The Broads National Park. In terms of sources of air pollution, road transport is most certainly the principal source of emissions that are adverse to air quality, similarly to most of the country. The roads with the greatest traffic flows and therefore emissions are the A47 (which has no relevant receptors in South Norfolk), the A140 and the A11.

There are no known significant areas of concern for air pollution from industrial operations in South Norfolk.

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 microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (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 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

South Norfolk District Council undertook the first round of Review and Assessment, including Stage 1 and 2 Reports, between 1999 and 2000. The main air quality issues were found to be related to emissions of nitrogen dioxide (NO₂) and particles (PM₁₀) from traffic. It was predicted that all of the air quality objectives would be achieved and that it was not necessary therefore to declare any Air Quality Management Areas (AQMAs) for any pollutant.

The Updating and Screening Assessment (USA) reconsidered the seven health based air quality objectives and it was completed in 2003. It was concluded that there was still no risk of exceedence and therefore, there was no requirement to carry out a Detailed Assessment for the second round of the Review and Assessment.

Due to local concerns a Further Assessment of Benzene levels was undertaken at Loddon to the East of the District. This 2005 assessment concluded that benzene levels were low in this area and there was no significant impact from a local Glass Fibre Reinforced Plastics Factory. In addition following local complaints it was identified that further investigation was needed into particulates from the intensive rearing of poultry. A Detailed Assessment was carried out in 2006. The conclusion was that, although the activity resulted in local increases in particulate matter, the emissions were not such that would cause the Air Quality Objectives to be exceeded.

The second USA took place in 2006 and the third in 2009. Similarly to the 2003 USA these assessments concluded that there was still no risk of exceeding any of the air quality objectives and therefore that Detailed Assessments were not required, which was the opinion continued in the 2010 Progress Report.

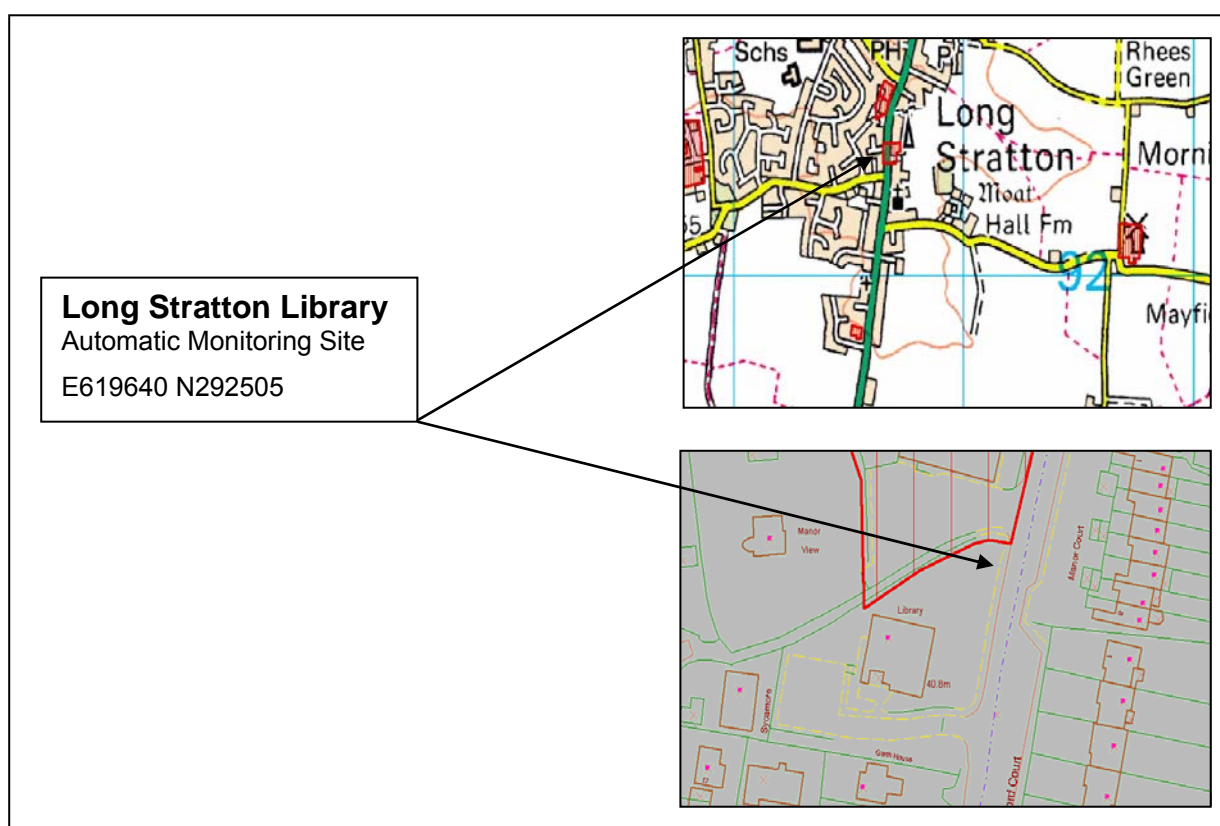
2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

The automatic monitoring site is positioned at Long Stratton Library, a roadside site 3 metres from the kerb. The site is within 21 metres of a relevant exposure and monitors NO₂ and PM₁₀. The location of the site is shown on the map in figure 1 below:

Figure 1 Location of Long Stratton Automatic Monitoring Site



The Long Stratton Library automatic monitoring site is calibrated fortnightly by the local authority who acts as the LSO. The data validation and ratification was done by AEA from April 2009, but previously this was undertaken by TRL.

Table 2.1 Details of 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 ?
Long Stratton NOx	Roadside	X 619640 Y 292505	NO ₂ , PM ₁₀	N	Y (21m)	2m	N

2.1.2 Non-Automatic Monitoring

Nitrogen Dioxide (NO₂) is measured using 29 diffusion tubes at 27 sites in the District. South Norfolk District Council uses the 'Red Cap' diffusion tubes supplied and analysed by Gradko: with a preparation mixture of 20% TEA in deionised water. Gradko is chosen for it's excellence in analysis, complying with the WASP scheme and achieving 'good' performance based on old and new criteria for the January 2010 – January 2011 period.

Details of the diffusion tube monitoring locations are provided in Table 2.1. The locations include residential locations close to main roads, rural background and rural locations across the district.

A bias adjustment factor (BAF) of 0.92 has been used, being taken from the April 2011 version of the 'National Diffusion Tube Bias Adjustment Factor Spreadsheet', which was calculated using data from national co-location studies. National BAF have always been used in the district and this has continued this year, despite the availability of a Local BAF from the triplicate diffusion tube co-location study at the Long Stratton NO_x real time monitoring station. The national BAF was chosen because the Local BAF of 0.61 was very low and inconsistent with the national BAF used historically, and so could be a data 'outlier' that would significantly skew the bias adjusted tube data – basically reducing all measured concentrations by approximately a third.

South Norfolk District Council, Norfolk, England

Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure?	Distance to kerb of nearest road	Worst-case Location?
Old Newmarket Road, Cringleford	Urban Roadside	X619270 Y304645	NO ₂	N	Y (11 m)	1 m	Y
The Roundhouse, Cringleford	Urban Kerbside	X619029 Y305722	NO ₂	N	Y (4 m)	1 m	Y
New Found Farm, Cringleford	Rural Kerbside	X618586 Y307019	NO ₂	N	Y (45 m)	1 m	N
Longwater Lane (top), Costessey	Urban Kerbside	X616890 Y310429	NO ₂	N	Y (43 m)	1 m	Y
Watton Road, Colney	Rural Roadside	X617896 Y307856	NO ₂	N	Y (19 m)	2 m	N
Church Street, Hingham	Urban Roadside	X602186 Y302168	NO ₂	N	Y (11 m)	4 m	Y
Harford Bridge	Rural Roadside	X621879 Y304912	NO ₂	N	Y (48 m)	2 m	N
Norwich Road, Poringland	Urban Roadside	X626832 Y302033	NO ₂	N	Y (14 m)	3 m	Y
Denmark Street, Diss	Urban Kerbside	X611247 Y279654	NO ₂	N	Y (3 m)	1 m	Y
Victoria Road (East), Diss	Urban Kerbside	X621509 Y279312	NO ₂	N	Y (25 m)	1 m	Y
West End, Costessey	Urban Kerbside	X616879 Y311554	NO ₂	N	Y (7 m)	1 m	N
Tesco, Diss	Urban Roadside	X611774 Y279591	NO ₂	N	Y (3 m)	2 m	Y
Harleston	Urban Roadside	X624472 Y283279	NO ₂	N	Y (10 m)	5 m	Y
Church Plain, Loddon	Urban Roadside	X636206 Y298704	NO ₂	N	Y (2 m)	2 m	Y
A140, Long Stratton	Urban Roadside	X619722 Y292745	NO ₂	N	Y (5 m)	3 m	Y
Fairland Street, Wymondham	Urban Roadside	X611136 Y301417	NO ₂	N	Y (0 m)	3 m	Y
A11 Slip Road, Cringleford	Urban Kerbside	X619425 Y305648	NO ₂	N	Y (11 m)	1 m	Y
Kirby Bedon Road, Bixley	Rural Kerbside	X625446 Y306160	NO ₂	N	Y (20 m)	1 m	Y
Loddon Road, Bixley	Rural Kerbside	X625681 Y305963	NO ₂	N	Y (20 m)	1 m	Y
Wymondham Waitrose	Urban Roadside	X612544 Y302650	NO ₂	N	Y (25 m)	5 m	Y
Hethersett Road, Thickthorn	Rural Roadside	X618217 Y305591	NO ₂	N	Y (75 m)	2 m	Y
Long Stratton NOx A	Urban Roadside	X619640 Y292505	NO ₂	N	Y (21 m)	2 m	N
Norwich Road, Hethersett	Urban Roadside	X615917 Y304906	NO ₂	N	Y (25 m)	3 m	Y
Cringleford Park & Ride	Rural Background	X618082 Y305510	NO ₂	N	Y (45 m)	97 m	N
Long Stratton NOx B	Urban Roadside	X619640 Y292505	NO ₂	N	Y (21 m)	2 m	N
Long Stratton NOx C	Urban Roadside	X619640 Y292505	NO ₂	N	Y (21 m)	2 m	N
Main Road, Mangreen	Rural Kerbside	X620916 Y303536	NO ₂	N	N (392 m)	1 m	N
Longwater Lane (Bridge), Costessey	Urban Kerbside	X616955 Y311242	NO ₂	N	Y (20 m)	1 m	Y
Thurton Foundry	Rural Roadside	X632885 Y300925	NO ₂	N	Y (20 m)	3 m	Y
Chinese, Stratton	Urban Kerbside	X619707 Y292731	NO ₂	N	Y (0 m)	1 m	Y

Traffic light east, Long Stratton	Urban Kerbside	X619731 Y292743	NO ₂	N	Y (5 m)	1 m	Y
Chemists A140, Long Stratton	Urban Kerbside	X619706 Y292706	NO ₂	N	Y (0 m)	1 m	Y
South bound A140, Long Stratton	Urban Kerbside	X619715 Y292695	NO ₂	N	Y (10 m)	1 m	Y
Chemists Swan Lane, Long Stratton	Urban Kerbside	X619707 Y292719	NO ₂	N	Y (5 m)	1 m	Y
Dereham Road, Costessey	Urban Roadside	X618896 Y309758	NO ₂	N	Y (20 m)	5 m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Table 2.3a displays the annual mean nitrogen dioxide monitoring results from the automatic monitoring sites in the borough for 2008, 2009 and 2010.

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

Site ID	Location	Within AQMA?	Data Capture for monitoring period %	Data Capture for full calendar year 2010 %	Annual mean concentrations (µg/m ³)		
					2008	2009	2010
1	Long Stratton NOx	N	91.3	91.3	33.4	23	19

There were no exceedences of the annual mean nitrogen dioxide objective (40µg/m³) at the Long Stratton automatic monitoring site in 2008, 2009 or 2010.

Table 2.3b shows that there were no exceedences of the hourly mean nitrogen dioxide AQS objective, measured at the Long Stratton automatic monitoring site, for 2008, 2009 and 2010.

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

Site ID	Location	Within AQMA?	Data Capture for monitoring period %	Data Capture for full calendar year 2009 %	Number of Exceedences of hourly mean (200 µg/m ³)		
					2008	2009	2010
1	Long Stratton NOx	N	91.3	91.3	0	0	0

Diffusion Tube Monitoring Data

Table 2.4 shows the adjusted and unadjusted for bias diffusion tube monitoring results for 2010. Prior to bias adjustment there were slight exceedences at the A140 and Chemists A140, Long Stratton sites, plus the A11 Slip Road, Cringleford site, but these were found to be at acceptable concentrations once bias adjustment had been taken into account.

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	Within AQMA?	Data Capture 2009 %	Annual mean concentrations	
				Unadjusted 2010	2010 ($\mu\text{g}/\text{m}^3$) Adjusted for bias
1	Old Newmarket Road, Cringleford	N	92	33.42	30.75
2	The Roundhouse, Cringleford	N	100	22.96	21.12
3	New Found Farm, Cringleford	N	83	24.06	22.13
4	Longwater Lane (top), Costessey	N	58	24.32	22.38
5	Watton Road, Colney	N	75	34.33	31.58
6	Church Street, Hingham	N	92	25.44	23.40
7	Harford Bridge	N	100	24.57	22.60
8	Norwich Road, Poringland	N	100	28.43	26.15
9	Denmark Street, Diss	N	100	35.16	32.35
10	Victoria Road (East), Diss	N	92	34.21	31.47
11	West End, Costessey	N	67	27.38	25.19
12	Tesco, Diss	N	100	29.67	27.29
13	Harleston	N	100	29.29	26.95
14	Church Plain, Loddon	N	92	19.14	17.61
15	A140, Long Stratton	N	92	41.65	38.32
16	Fairland Street, Wymondham	N	83	30.25	27.83
17	A11 Slip Road, Cringleford	N	92	41.52	38.20
18	Kirby Bedon Road, Bixley	N	100	29.94	27.54
19	Loddon Road, Bixley	N	75	34.32	31.57
20	Wymondham Waitrose	N	100	30.10	27.69
21	Hethersett Road, Thickthorn	N	100	30.20	27.78
22	Long Stratton NOx A	N	100	28.89	26.58
23	Norwich Road, Hethersett	N	92	27.14	24.97
24	Cringleford Park & Ride	N	92	23.14	21.29
25	Long Stratton NOx B	N	100	30.96	28.48
26	Long Stratton NOx C	N	100	30.34	27.91
27	Main Road, Mangreen	N	100	15.33	14.10
28	Longwater Lane (Bridge), Costessey	N	75	30.17	27.76
29	Thurton Foundry	N	67	24.59	22.62
30	Chinese, Long Stratton	N	67	34.26	31.52
31	Traffic light east, Long Stratton	N	67	38.79	35.68
32	Chemists A140, Long Stratton	N	67	40.87	37.60
33	South bound A140, Long Stratton	N	67	38.00	34.96
34	Chemists Swan Lane, Long Stratton	N	58	27.38	25.19
35	Dereham/Norwich Rd, Costessey	N	50	25.69	23.63

BOLD Measured concentration exceeds the AQS objective

BOLD New for 2010

2.2.2 PM₁₀

Table 2.5a displays the annual mean PM₁₀ monitoring results from the Long Stratton automatic monitoring site across the time series 2008 - 2010. All statistics have been ratified according to QA/QC procedures outlined in appendix A.

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

Site ID	Location	Within AQMA?	Data Capture 2008 %	Annual mean concentrations (µg/m ³)		
				2008*	2009*	2010*
1	Long Stratton NOx	N	90.4	18.4	22	22

* Adjusted using VCM

When assessing the 2008, 2009 and 2010 annual mean PM₁₀ concentrations against the AQS Objective of 40 µg/m³, no exceedences are evident at the Long Stratton automatic monitoring site.

Table 2.5b shows the number of exceedences of the 24-hour mean PM₁₀ AQS objective, measured at the Long Stratton automatic monitoring site across the time series 2008 – 2010.

Table 2.5b Results of PM₁₀ Automatic Monitoring: Comparison with 24-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture 2008 %	Number of Exceedences of daily mean objective (50 µg/m ³) <i>If data capture < 90%, include the 90th %ile of daily means in brackets.</i>		
				2008*	2009*	2010*
1	Long Stratton NOx	N	90.4	9 (33.38)	2	3

* Adjusted using VCM

When assessing the 2008, 2009 and 2010 24-hour mean PM₁₀ concentrations against the AQS Objective of 50 µg/m³, not to be exceeded more than 35 times per year, this objective was not breached at the Long Stratton automatic monitoring site, as there were only three daily exceedences during 2010.

3 Conclusions and Proposed Actions

3.1 Conclusions from New Monitoring Data

South Norfolk District Council currently undertakes ambient monitoring of the following pollutants covered by the AQS: nitrogen dioxide (NO₂) and particulate matter (PM₁₀).

Diffusion tube monitoring of NO₂ is carried out at a number of locations in the South Norfolk District Area. NO₂ monitoring is currently undertaken at twenty-seven sites across the District. For 2010, some additional diffusion tubes were allocated to the following locations to allow enhanced monitoring around the busy t-junction of the A140 and Swan Lane in Long Stratton and also to screen in the vicinity of the Dereham Road and Norwich Road t-junction in Costessey:

Chinese, Long Stratton; Traffic light east, Long Stratton; Chemists A140, Long Stratton; South bound A140, Long Stratton; Chemists Swan Lane, Long Stratton; Dereham Road, Costessey.

9.1.1 Nitrogen dioxide

In terms of automatic monitoring of NO₂, there were no exceedences of the annual mean NO₂ objective (40µg/m³) at the Long Stratton monitoring site in 2010.

The hourly mean objective for NO₂ (200 µg/m³ not to be exceeded more than 18 times per year) was also not exceeded at the Long Stratton monitoring site in 2010.

When assessing the 2010 annual mean NO₂ concentrations, measured using diffusion tubes, (bias adjusted using national factor) against the AQS Objective of 40 µg/m³, there were no exceedences evident at any of the diffusion tube monitoring sites.

Where possible, the NO₂ concentration distance from roads calculator was used to predict the concentration at the nearest relevant receptor from each diffusion tube. For each of the diffusion tubes that measured concentrations that exceeded the annual mean AQS objectives it was predicted that there were no exceedences at the relevant receptors.

9.1.2 Particulate matter

When assessing the 2008, 2009 and 2010 annual mean PM₁₀ concentrations against the AQS Objective of 40 µg/m³, no exceedences are evident at the automatic monitoring sites. Furthermore, when assessing the 2008, 2009 and 2010 24-hour mean PM₁₀ concentrations against the AQS Objective of 50 µg/m³, not to be exceeded more than 35 times per year, this objective was not breached, as there were only three daily exceedences at the Long Stratton monitoring site during 2010.

9.1.3 Other Pollutants

No monitoring is currently undertaken in South Norfolk District Council for 1,3-butadiene, benzene, carbon monoxide, lead, particulate matter and sulphur dioxide.

Based upon the findings of the previous assessments, the concentrations of these other pollutants are unlikely to be in excess of the air quality objectives at any location.

3.2 Proposed Actions

There is no requirement to proceed with a detailed assessment. South Norfolk District Council shall continue its review and assessment process by submitting an Updating and Screening Assessment in 2012.

4 References

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UK National Air Quality Information Archive, UK background concentrations of NO_x, NO₂, PM₁₀, Download CSV Format Background Maps for 2006 to 2020 accessed on the UK Air Quality Achieve website
(<http://www.airquality.co.uk/archive/laqm/tools.php?tool=background06>)

Appendices

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Diffusion tubes may systematically under or over-read NO₂ concentrations when compared to the reference chemiluminescence analyser. This is described as bias and can be corrected for to improve the accuracy of the diffusion tube results, using a suitable bias adjustment factor.

Nitrogen Dioxide (NO₂) is measured using diffusion tubes at 24 sites in the District. South Norfolk District Council uses the 'Red Cap' diffusion tubes supplied and analysed by Gradko: a preparation mixture of 20% TEA in deionised water is used.

The bias adjustment factor used within this Updating and Screening Assessment was derived from the national database of co-location studies,

[http://laqm.defra.gov.uk/documents/Diffusion Tube Bias Factors v04_11_v6.xls](http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors_v04_11_v6.xls). The results from this spreadsheet provided a national bias adjustment factor of 0.92. National bias adjustment factors have always been used in the district. Though the Long Stratton NO_x Real Time Monitoring Station triplicate co-location diffusion tube site produces a local bias adjustment factor for use when suitable.

Volatile Correction Model for Tapered Element Oscillating Microbalance analysers (TEOM) PM analysers

Monitoring concentration of PM in ambient air is not straightforward. This is due to the complex nature and composition of PM. The method selected for the collection and determination of the particle mass thus has an influence upon the mass concentration that is subsequently reported. One TEOM analysers are used by South Norfolk District Council to support Local Air Quality Management (LAQM) work. However, the outcome of recent equivalence tests for various PM₁₀ samplers, when compared with the European reference sampler, (Harrison D (2006) UK Equivalence Programme for Monitoring for Particulate Matter, available at www.airquality.co.uk/archive/reports/list.php) means that TEOM analysers cannot strictly be used to measure PM₁₀ concentrations for comparison with the air quality objectives.

The UK Government and Devolved Administrators recognise that many local authorities have invested considerable resources in TEOM analysers, and it may not be practical to replace these instruments on the short term. It is therefore considered appropriate that TEOM analysers should remain suitable for use for purpose of LAQM, but wherever possible the data collected should be adjusted using the Volatile Correction Model (VCM) rather than the use of a simple 1.3 multiplication factor.

For the purposes of this Updating and Screening Report, the VCM web portal, www.volatile-correction-model.info/Default.aspx, has been used to download geographically specific correction factors to be applied to the 2008 TEOM PM₁₀ data from the TEOM PM₁₀ analyser.

QA/QC of diffusion tube monitoring

The Workplace Analysis Scheme for Proficiency (WASP) is an independent analytical performance-testing scheme, operated by the Health and Safety Laboratory (HSL). WASP formed a key part of the former UK NO₂ Network's QA/QC, and remains an important QA/QC exercise for laboratories supplying diffusion tubes to Local Authorities for use in the context of Local Air Quality Management (LAQM). The laboratory participants analyse four spiked tubes, and report the results to HSL. HSL assign a performance score to each laboratory's result, based on their deviation from the known mass of nitrite in the analysis.

The outcomes of these QA/QC schemes are evaluated on a regular basis against a set of pre-defined performance criteria. The Performance criteria are based upon the Rolling Performance Index (RPI) statistic.

Gradko Laboratories takes part in the independent Workplace Analysis Scheme for Proficiency and demonstrated good performance in the WASP scheme for analysis of NO₂ diffusion tubes, January 2010 – January 2011. Gradko is chosen for it's excellence in analysis, complying with the WASP scheme and achieving 'good' performance based on old and new criteria for the January 2009 – January 2010 period.