

Updating and Screening Assessment - 2007 Progress Report

Introduction

In April 2007 North Norfolk District Council produced an Updating and Screening Assessment under the Air Quality Review and Assessment process imposed on local authorities to examine, manage and report on local air quality within their area.

The assessment considered each of the 7 pollutants in turn and studied local levels relative to the Air Quality Strategy objectives.

The report took information from, monitoring data, desktop study data, information cited in the Air Quality Stage 1 and Stage 2 reports and details of new pollution sources or significant changes to current pollution sources both within the District and within neighbouring Authority areas. Information was also gathered from our Strategic Planning Department and the Country Highways Department to assess whether any proposed industrial or highway construction/changes could have an impact on predicted local pollution levels.

As a result this assessment concluded that all the Air Quality Objectives have been met. North Norfolk has no Air Quality Management Areas and there are no planned changes that would significantly affect the air quality.

Local Air Quality Monitoring

North Norfolk District Council runs a comprehensive diffusion tube sampling program looking at specific concerns or sites, as well as a continuous air quality monitoring station.

There are 14 monitoring sites across North Norfolk (see table 1) monitoring Oxides of Nitrogen. These sites comprise two large towns, Cromer and North Walsham, the market town of Fakenham, the village of Hoveton and the village of Bacton used as a Background site.

Nitrogen Oxides are monitored due to concerns over the emissions from Road vehicles and sites are selected due to their volume of traffic, level of congestion, proximity to receptors, e.g. residential property, general public. Benzene was monitored between April 2004 and June 2006 using diffusion tubes to provide confidence in meeting the more stringent 2010 objective. The 2007 Updating and Screening Assessment demonstrated that the 2010 objective has been met and the monitoring program was stopped.

The Bacton Air Quality Monitoring Station provides a continuous monitoring site accredited to national standards where selected pollutants can be measured at a rural background site.

The site is used for the continuous monitoring of SO₂, NO_x, and, PM₁₀ along with meteorological data. The Station is also used as a co-location site with diffusion tubes including three NO_x tubes.

North Norfolk District Council Monitoring Locations

Site Name	Location	Pollutant	Site Type	Method	OS Grid Ref.
Cromer 1	9 Hamilton Road, Cromer	NO _x	Roadside	Diffusion Tube	TG 217 422
Cromer 6	33 Cliff Road, Cromer	NO _x	Background	Diffusion Tube	TG 227 412
North Walsham 8	Angel Court, North Walsham	NO _x	Roadside	Diffusion Tube	TG 281 303
North Walsham 7	26 Corbett Road, North Walsham	NO _x	Background	Diffusion Tube	TG 283 309
Fakenham 9	Post Office, Queens Road, Fakenham	NO _x	Roadside	Diffusion Tube	TF 921 296
Fakenham 9	Post Office, Queens Road, Fakenham	NO _x	Roadside	Diffusion Tube	TF 921 296
Fakenham 9a	33-35 Oak Street, Fakenham	NO _x	Roadside AQC	Diffusion Tube	TF01868 29640
Fakenham 4	Fakenham Infants School, Norwich Road, Fakenham	NO _x	Background	Diffusion Tube	TF 926 296
Hoveton10a	Miss Roy Stalham Road, Hoveton	NO _x	Roadside	Diffusion Tube	TG303181
Hoveton10b	Miss Roy Stalham Road, Hoveton	NO _x	Roadside AQC	Diffusion Tube	TG309186
Hoveton 10c	Roys Food Hall, Stalham Road, Hoveton	NO _x	Roadside	Diffusion Tube	TG30155 18285
Hoveton 11	Waveney Close, Stalham Road, Hoveton	NO _x	Background	Diffusion Tube	TG31133 18622
Bacton 12	Church Farm, Church Road, Bacton	NO _x	Background co-location AQC	Diffusion Tube	TG33344 33667
Bacton 13	Church Farm, Church Road, Bacton	NO _x	Background co-location AQC	Diffusion Tube	TG33344 33667
Bacton 14	Church Farm, Church Road, Bacton	Nox,	Background co-location AQC	Diffusion Tube	TG33344 33667
Bacton 15	Church Farm, Church Road, Bacton	Nox, SO ₂	Background co-location AQC	Continuous	TG33344 33667

Recent Monitoring Data

Due to problems with diffusion tube sampling experienced during the year North Norfolk District Council was unable to gain a complete data set however enough data was collected to demonstrate that there has been no increase in NO_x concentrations at any of the sampling locations.

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Results of the 2006/7 NO₂ diffusion tube monitoring ($\mu\text{g m}^{-3}$).

Monitoring Site	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Mean	Corrected
Cromer 1	23.77	32.38	40.17		30.10	32.14	39.82	30.35	37.07	31.25	39.18	34.41	33.69	33.02
Cromer 6	10.97	12.78	15.02		10.07	17.04	14.84	18.81	20.75	0.00	20.84	12.85	14.00	13.72
North Walsham 8	24.51	27.89	40.78		28.89	24.38	42.56	32.94	29.94	27.57	32.52	26.87	30.80	30.19
North Walsham 7	12.00	12.16	12.50		9.86	15.80	18.44	21.85	20.30	0.00	22.77	17.22	14.81	14.51
Fakenham 9	25.22	24.93	36.03		16.04	24.53	28.46	34.30	26.05	29.24	29.17	30.11	27.64	27.09
Fakenham 9a	19.75	21.67	23.04		15.77	23.04	24.01	28.54	24.32	28.54	29.66	25.93	24.02	23.54
Fakenham 4	10.57	9.78	8.76		8.79	13.47	11.72	18.74	16.95	18.79	17.67	12.00	13.39	13.12
Hoveton 10a	34.34	39.24			40.50	34.43	38.57	38.06				35.67	36.97	36.23
Hoveton 10b	27.98	40.51	51.07		47.24	32.13	37.01	35.00					38.71	37.93
Hoveton 10c	27.34	35.62	57.22								38.69		39.72	38.92
Hoveton 11	11.25	9.60	7.50		8.80			20.30	18.74		19.28		13.64	13.37
Bacton 12	9.63	11.43	38.56						11.06	15.49	18.91		17.51	17.16
Bacton 13	10.21	13.01	37.83						11.71	16.33	20.18		18.21	17.85
Bacton 14	13.21	10.66	41.91						11.73	18.12	17.97	12.37	18.00	17.64

Gradko International, our diffusion tube supplier, have stated that the mean % bias correction for our data of 20% TEA/WATER is 0.9.

Continuous Monitoring data

Fully Ratified Data 01/04/2006 to 31/03/2007, Bacton Air Quality Monitoring Station

Pollutant	NO _x	NO ₂
Max 15-Min Mean	1013 (µg m ⁻³)	175(µg m ⁻³)
Max Hourly Mean	556 (µg m ⁻³)	114 (µg m ⁻³)
Max Running 24hr Mean	83 (µg m ⁻³)	57 (µg m ⁻³)
Max Daily Mean	88 (µg m ⁻³)	55 (µg m ⁻³)
Average	13 (µg m ⁻³)	11 (µg m ⁻³)
Data Capture	75.61%	75.61%

Number of Exceedences of the Objectives

Pollutant	Air Quality (England) Regulations (Amendment) 2002	2000 / Regulations	Exceedences	Days
Nitrogen Dioxide	Annual Mean >40 µg m ⁻³		0	-
Nitrogen Dioxide	Hourly Mean >200 µg m ⁻³		0	0

Pollutant	PM ₁₀₊
Max 15-Min Mean	102 (µg m ⁻³)
Max Hourly Mean	46 (µg m ⁻³)
Max Running 8hr Mean	43 (µg m ⁻³)
Max Running 24hr Mean	26 (µg m ⁻³)
Max Daily Mean	23 (µg m ⁻³)
Average	17 (µg m ⁻³)
Data Capture	42%

Pollutant	Air Quality (England) Regulations 2000 / (Amendment) Regulations 2002	Exceedences	Days
PM ₁₀ Particulate Matter (Gravimetric)	Daily Mean >50 µg m ⁻³	0	0
PM ₁₀ Particulate Matter (Gravimetric)	Annual Mean >40 µg m ⁻³	-	-

Discussion

The Authority has suffered significant problems with the diffusion tube monitoring in Hoveton due to third party interference with the diffusion tubes. A road traffic accident destroyed two of the monitoring locations and prevented monitoring for several months. However, from the data that was collected it can be seen that there has generally been a minor reduction in the pollutant levels detected and assuming that this trend would continue through out the year no further action is required.

Further more, there have been no changes to the traffic flow through the area and there have been no developments that would affect the air quality.

Conclusion

North Norfolk District Council has continued with its Diffusion tube monitoring network and will continue with the current level of monitoring.

In 2006 North Norfolk District Council took the decision to move the management of its continuous monitoring data in-house and invested in software to collect and analyse the data. A delay in the delivery and training in the software caused a loss of data and a concern over the accuracy of parts of the data. As a result through the screening and ratification process a large proportion of the data had to be excluded.

The issues that have affected the Hoveton diffusion tube monitoring have been resolved and we are now getting regular data which continues to provide confidence our conclusion that air quality in Hoveton is improving and no further action is required at this time.

All the current monitoring data shows that North Norfolk District Council continues to meet all the Air Quality Objectives and no there is no requirement to proceed to detailed assessment for any of the pollutants.