

**Mid Suffolk District Council**

**Environmental Control Section**

**Progress Report on Air Quality in Mid  
Suffolk**

**April 2004**

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## **1.Executive Summary**

1.1 This annual progress report is provided for submission to the Department of Food, Environment and Rural Affairs (DEFRA), as is required by the Environment Act 1995 and regulations made thereunder.

1.2 Matters, which could have an impact upon air quality must be considered with a view to taking further action by way of monitoring and/or preparing air quality action plans.

1.3 Guidance issued by DEFRA advises as to those matters which should be considered as part of the progress report.

1.4 All relevant matters have been considered and there are no indications that any new developments will have had a significant impact on air quality

1.5 There is no need, at this point in time, to make any commitment to further monitoring

1.6 As highlighted in the Upgrading and Screening Assessment of Air Quality in Mid Suffolk (June 2003), it will be necessary to undertake further monitoring of particulate matter (PM<sub>10</sub>) levels along the A14 carriageway during the summer of 2004

## **2 Introduction**

2.1 The previous air quality assessment undertaken in Mid Suffolk, in June 2003 (Ref.1), indicated that all air quality objectives would be met.

2.2 Previous assessments of air quality have been based on undertaking four-yearly reviews, but in an attempt to keep the topic at the forefront of Local Authority agendas, DEFRA now require that some form of assessment is carried out on an annual basis. If there are no outstanding air quality issues then the assessment may be undertaken as a progress report.

2.3 Guidance, issued by DEFRA, (Ref.2) advises as to the appropriate issues to consider in undertaking a progress report. Local Authorities are required to have regard to this guidance when undertaking the review.

2.4 The only pollutant monitoring undertaken by Mid Suffolk Council at the moment is for nitrogen dioxide. This is undertaken by way of passive diffusion tubes, and the most recent results will be considered in this report.

2.5 Other matters to consider in the progress report are any new roads, industrial processes or other developments that could have an impact on air quality.

2.6 Previous reports have indicated that of the seven substances for which air quality objectives have been established (see section 3), the main pollutant of concern is particulate matter (PM<sub>10</sub>). No PM<sub>10</sub> monitoring has been undertaken since the summer of 2001, but although there has been no exceedence of the air quality objective, a further exercise will be undertaken during the summer of 2004.

### 3. Air Quality Objectives

<u>Pollutant</u>	<u>Air Quality Objective</u>	<u>Measured As</u>	<u>Compliance Date</u>
<u>Benzene</u>	16.25 µg/m <sup>3</sup> 5.0 µg/m <sup>3</sup>	<u>Running Annual Mean</u> Annual Mean	<u>31.x12.2003</u> 31.12.2010
<u>1,3-butadiene</u>	2.25 µg/m <sup>3</sup>	<u>Running Annual Mean</u>	<u>31.12.2003</u>
<u>Carbon Monoxide</u>	<u>10 mg/m<sup>3</sup></u>	<u>Maximum Daily Running 8-hour mean</u>	<u>31.12.2003</u>
<u>Lead</u>	0.5 µg/m <sup>3</sup> 0.25 µg/m <sup>3</sup>	<u>Annual Mean</u> Annual Mean	<u>31.12.2004</u> 31.12.2008
<u>Nitrogen Dioxide</u>	200 µg/m <sup>3</sup> not to be exceeded more than 18 times per year 40 µg/m <sup>3</sup>	<u>1-hour mean</u> Annual Mean	<u>31.12.2005</u> 31.12.2005
<u>Particulates (PM<sub>10</sub>)</u>	50µg/m <sup>3</sup> not to be exceeded more than 35 times a year 40µg/m <sup>3</sup>	<u>24-hour mean</u> Annual mean	<u>31.12.2004</u> 31.12.2004
<u>Sulphur Dioxide</u>	350µg/m <sup>3</sup> not to be exceeded more than 24 times per year 125µg/m <sup>3</sup> not to be exceeded more than 3 times a year 266µg/m <sup>3</sup> not to be exceeded more than 35 times a	<u>1-hour mean</u> 24-hour mean 15-minute mean	31.12.2004 31.12.2004 31.12.2005

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## **4. Monitoring Results**

4.1 The only pollutant currently monitored in Mid Suffolk is nitrogen dioxide.

4.2 Nitrogen dioxide (NO<sub>2</sub>) levels are monitored using passive diffusion tubes supplied and analysed by Casella CRE AIR.

4.3 Casella are a NAMAS accredited laboratory and, as part of their QA procedures, carry out a monthly inter-comparison with diffusion tubes supplied by other laboratories.

4.4 Tubes are exposed for one-month periods, and the average monthly NO<sub>2</sub> level is determined. The tube preparation method is 10% TEA (tri-ethanolamine) in water.

4.5 Due to a degree of uncertainty in the use of passive diffusion tubes, the results from their analysis are compared to those of a continuous monitor – a chemiluminescence analyser. Guidance issued by DEFRA (Ref 3) advises as to how this must be carried out, and how a “bias adjustment factor - A” must be determined.

4.6 This work has been undertaken on behalf of Casella CRE AIR by NETCEN, and the results indicate that the measured values must be adjusted by a bias factor of 0.94.

4.7 Results over a period of 9 years, since April 1995 have shown that the air quality objectives for nitrogen dioxide have not been exceeded at the chosen locations in Mid Suffolk.

4.8 The primary cause of nitrogen dioxide emissions is from vehicle exhausts, and therefore high NO<sub>2</sub> levels will most likely occur adjacent to major traffic routes and at busy junctions.

4.9 Previously, sites have been set up as background, intermediate and roadside locations. However, since January 2004 the location of the five monitoring stations has been moved such that all are at locations considered to be most sensitive, rather than being randomly distributed to follow the roadside/background methodology.

4.10 The diffusion tubes are located at the following locations -

High Street, Needham Market (4m from kerbside)

Station Road, Claydon (4m from kerbside)

Lower Crescent, Barham (21m from A14 kerbside)

Foresters Walk, Barham (40m from A14 kerbside)

Old Stowupland Road, Stowmarket (13m from A14 kerbside)

These locations are shown on maps in Appendix 1

With the exception of the tube in Needham Market, all are in sensitive locations in respect of traffic emissions from the A14 carriageway.

4.11 It is too early in the latest study to determine the NO<sub>2</sub> levels at these locations, and this will be reported on further in the next progress report.

4.12 As an indication of compliance with the air quality objective for nitrogen dioxide (the annual mean value), diffusion tube results from the last six years (bias corrected with factor A of 0.94)) are shown in Table 1 below.

<b>Year</b>	<b>The Street, Thornham Magna (Background Site)</b>	<b>Red Gables, Stowmarket (Intermediate Site)</b>	<b>High Street, Needham Market (Roadside Site)</b>	<b>Station Road, Claydon, (Roadside Site)</b>	<b>Old Stowupland Road, Stowmarket</b>
1998	18.7	21.3	35.3	33.3	
1999	13.7	23.3	39.6	34.3	
2000	11.4	18.6	30.2	31.7	
2001	10.8	18.9	29.4	25.2	21.6
2002	12.0	19.0	22.6	28.6	26.2
2003	13.3	17.6	21.8	23.5	24.6

**Table 1** – Annual Mean Concentration of Nitrogen Dioxide Levels at Locations across Mid Suffolk (expressed as µg/m<sup>3</sup>, nitrogen dioxide/air)

(Note – the Air Quality Objective for the Annual Mean Concentration is 40µg/m<sup>3</sup>)

## **5. New Local Developments**

5.1 No new, or substantially changed, industrial processes have developed within Mid Suffolk since the previous air quality assessment.

5.2 No new major roads have been constructed since the previous assessment, and the impact of the proposed B1115 relief road in Stowmarket was considered in the previous report.

5.3 No planning applications have been determined, within the last year, which would have a major impact on air quality objectives.

5.4 No known landfill sites or quarries have been developed since the previous review.

5.5 In conclusion there are no known developments with the potential to have a significant impact on air quality.

## **6. Proposed Developments**

6.1 Developments, which have not yet been the subject of a formal planning application, must be considered with caution. However, there are two “potential” developments, which have been the subject of pre-application discussions, which could both have an impact on air quality. The reason being that both could generate significant amounts of traffic along the A14 corridor

6.2 The two matters under consideration are –

A proposed sports and entertainment complex in Great Blakenham

A proposed railfreight depot in Stowmarket/Creting St Peter

6.3 If formal applications are received then air quality assessments will be requested as part of the environmental impact assessment, and the Council will seek to promote alternatives to increased car use along the A14.

6.4 Consideration will also be given as to whether these proposals will affect neighbouring authorities, especially in respect of increased traffic along the A12 and A14 carriageways. Developers will also be requested to address these issues.

6.5 Developments outside of the Authority’s district could also have an impact upon air quality. The expansion of the port of Felixstowe is such an issue. Currently, the Suffolk Air Quality Management Group (a group which contains representatives of all Local Authorities in Suffolk) is seeking to obtain information, from the port operators, relating to the potential increase in traffic.

6.6 In conclusion, there may be future developments that could impact upon air quality, and these issues will be addressed when such applications are made.

## **7. Local Air Quality Strategies**

7.1 In the absence of any exceedences of the air quality objectives, Mid Suffolk District Council currently has no local air quality strategies.

7.2 Further monitoring of PM<sub>10</sub> concentrations along the A14 corridor will be undertaken during the summer of 2004, and if it appears that the air quality objective may be breached, or that concentrations are close to the objective then consideration will be given to implementing a local air quality strategy.

## **8. Air Quality Planning Policy**

8.1 Currently, and largely because there are no existing problems relating to the air quality objectives, there is no policy relating to air quality in the Mid Suffolk local plan. However, when the plan is reviewed during the Autumn of 2004, it is intended to include air quality as a material consideration.

8.2 Further comment and detail will be provided in the next annual progress report.

## **9. Implementation of Local Transport Plans/Strategies**

9.1 Mid Suffolk District Council is consulted on and contributes to, the Suffolk Local Transport Plan (SLTP) which is prepared by the County Council.

9.2 The SLTP issued in July 2000 covers the period up to 2006 and includes a target that the air quality objectives shall not be exceeded across the County. The Suffolk Air Quality Management Group (comprising representatives from the County Council and all District Councils) has been established for this purpose.

9.3 Mid Suffolk Council works closely with the County Council, Town and Parish Councils and community groups in developing Local Transport Action Plans (LTAPs)

9.4 The 2003 Annual Progress Report on the SLTP highlights the following matters relating to transport plans in Mid Suffolk :-

(i)The proposed B1115 relief road in Stowmarket will include cycle routes, pedestrian paths and improved public transport.

(ii)The LTAP for Debenham includes an extension to the Leisure Centre car and cycle park, which serves as a rural “park and ride” facility for the Debenham bus-cycle service

(iii)A concessionary fares policy for community transport and taxis has been introduced using a voucher system.

(iv)The Council continues to contribute to work by Sustrans (the sustainable transport charity), in addition to pedestrian and cycling facilities in LTAPs

(v)A LTAP is in operation for Stowmarket (the largest town in the district).

## **10. Conclusions**

10.1 The monitoring data available for NO<sub>2</sub> shows that there has been no exceedence of the air quality objective.

10.2 There has been a change in focus regarding NO<sub>2</sub> monitoring, such that it is more closely linked to sensitive locations. More information will be available in the next Annual Progress Report.

10.3 There have been no developments, new roads or new industrial processes within Mid Suffolk, which could have a significant impact on any of the air quality objectives.

10.4 As advised in the previous Updating and Screening Assessment (June 2003), an exercise on PM<sub>10</sub> monitoring will be undertaken during the summer of 2004.

10.5 Pending the results of PM<sub>10</sub> monitoring, consideration will be given to the development of a local air quality strategy.

10.6 Future developments, which could impact on air quality, will be identified through the planning process, and appropriate information and monitoring of air quality will be requested of developers.

## **11. References**

1. Mid Suffolk District Council (June 2003) : *“Updating and Screening Assessment of Air Quality in Mid Suffolk”*

2) UK, Department of Environment Food and Rural Affairs (2003) : *“Progress Report Guidance LAQM.PRG(03)”*

3) UK, Department of Environment, Food and Rural Affairs (2003) : *“Local Air Quality Management, Technical Guidance LAQM TG(03)”*