

SOUTH CAMBRIDGESHIRE DISTRICT COUNCIL

REPORT TO: Environmental Health Portfolio Holder 25 January 2007
AUTHOR/S: Executive Director / Health Protection Team Leader

RESULTS OF THE DETAILED ASSESSMENT FOR NITROGEN DIOXIDE ALONG THE A14 CORRIDOR

Purpose

1. To inform the Portfolio Holder of the progress of the local air quality management regime and subsequent results of the review and assessment process.
2. To seek agreement from the Portfolio Holder for the declaration of an air quality management area adjacent to the A14 corridor between the Bar Hill and Milton intersections.

Executive Summary

3. The detailed assessment of nitrogen dioxide along the A14 corridor, recently completed in accordance with the Council's statutory duties on local air quality management, has predicted that the air quality standard for annual mean nitrogen dioxide will not be met in some areas adjacent to the A14. As there are residential properties within this location it may be assumed that some people may be exposed to levels of nitrogen dioxide during their day-to-day activities, which could potentially affect their health.
4. Legislation requires the Council to declare an air quality management area where there is likelihood that national air quality targets are being breached. It is therefore proposed that subject to the outcome of a consultation exercise this Council declare an Air Quality Management Area for nitrogen dioxide as indicated within the report.

Background

5. The Environment Act 1995 statutorily requires this Council to continually review and assess the air quality of seven key pollutants (ozone, nitrogen dioxide, carbon monoxide, particulate matter, sulphur dioxide, benzene and 1,3-butadiene) against nationally set health based targets. The process involves monitoring air quality and modelling (forecasting) the dispersion of pollutants from domestic, transport and industrial processes to determine whether there may be a risk to public health.
6. The first assessment, undertaken in 2000 adopted a phased approach to the review and assessment process concentrating on those areas where public exposure may present a health risk to individuals. The report highlighted that there were several areas that required pollution reduction measures but that the risk of exceeding air quality objectives in relevant locations was minimal. However, with increasing numbers of vehicles using the A14 and the forecast reduction in emissions owing to fleet renewal not coming to fruition concentrations of nitrogen dioxide have continued to increase.
7. The Annual Progress Report undertaken in 2004 identified that there may be a possibility that the annual mean nitrogen dioxide target would not be met in areas

adjacent to the A14. Continuous monitoring in 2005 showed that this objective was exceeded at the Bar Hill site and diffusion tube measurements at Cambridge Road, Girton also showed that the annual mean objective was exceeded in this location. This was reported in the Cambridgeshire Local Authorities Updating and Screening Assessment 2006, published last April. The conclusions of this report, subsequently accepted by DEFRA, were that South Cambridgeshire District Council should proceed to a detailed assessment of nitrogen dioxide in those areas.

Considerations

8. Computer dispersion modelling undertaken as part of the detailed assessment has predicted that traffic emissions along the A14 corridor are likely to cause an exceedance of the annual mean nitrogen dioxide objective at relevant locations. These include the façades of residential properties, 13 of which are within 20 metres of the carriageway. The extent of the area predicted to exceed the 40 µg/m³ target is illustrated in **Appendix 1**.
9. The Detailed Assessment was completed in November (full report available from the Health protection Team Leader on request) and submitted to DEFRA for review as required. To date we have not received comment but once this has been accepted we will proceed to consultation and declaration.

Options

10. There are limited options, as the Council is obliged to declare an Air Quality Management Area once it has predicted that an objective is unlikely to be met. There is scope however to decide and justify the geographic extent of the area.
11. Once the Order has been declared further assessment will be undertaken to confirm the necessity of the AQMA and its boundary. This work should be completed within 12 months and form the analytical evidence base for the Air Quality Action Plan, which must be produced and submitted to DEFRA to identify how the objectives will be achieved.

Implications

12. Because the high concentrations of nitrogen dioxide in the A14 corridor are due to vehicle emissions the Air Quality Action Plan will require working closely with the Highways Agency and the County Council in order to identify any measures available to reduce emissions and/or influence driver behaviour. This work will form a Stage 4 assessment, which will attempt to calculate the reduction required to achieve the objectives, identify the options, their respective air quality improvement and their cost effectiveness in order to rank and prioritise those measures that are to be implemented through the Air Quality Action Plan.
13. Examples of the actions which are available to the Highways Agency are:
 - (a) Reducing congestion near junctions by increasing capacity through altering road markings and signal times
 - (b) Providing car parks near to junctions to enable drivers to share cars thus reducing traffic flows
 - (c) Promoting alternative modes of travel through the travel industry during the holiday periods
 - (d) Using variable message signs to advise drivers when car parks are full or routes blocked thus avoiding queues backing onto the highway

- (e) Providing long distance coach stops at junctions with connecting local bus services
 - (f) Travel demand management using ramp metering at selected junctions to prevent flow breakdown on the main carriageway.
14. The A14 already forms the subject of one of the Highways Agency's targeted programme of improvements and the proposals will already have been subject to an assessment of their effect on air quality. This therefore presents an ideal opportunity to ensure that air quality improvements are delivered with the planned upgrading of the road layout.

15. Financial	A budget for the future air quality-monitoring programme has been identified within the Council's medium Term Financial Strategy.
Legal	The European Union's Air Quality Framework and daughter Directives prescribe limit values for certain pollutants, which all member states must meet. The Environment Act 1995 continues to provide the framework for local air quality management in England and Wales, Part IV of the Act prescribes those duties required to be carried out by Local Authorities including periodic review, declaration of AQMA's and production of Action Plans for those areas. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2000 and associated legislation prescribe air quality objectives and deadlines for meeting them, which are broadly in line with EU requirements.
Staffing	The declaration of an Air Quality Management Area will prioritise this area of work for officers. Production of an Action Plan will entail a lot of work bringing together a number of external organisations, which can be a time consuming task. This may impact on other work areas leaving them less well resourced.
Risk Management	Failure to improve air quality to meet National Air Quality Objectives will present a risk to public health and may incur penalties through the EU.
Equal Opportunities	Poor air quality particularly affects those individuals who already suffer with asthma or associated bronchial ailments and are more susceptible to pollutants in the atmosphere. Improving air quality gives everyone an equal chance of enjoying the outdoor environment and the associated benefits to health that this facilitates.

Consultations

16. A period of consultation on the proposed boundary of the AQMA will begin once we have received DEFRA's comments on the detailed assessment. Statutory consultations include the following organisations:
- (i) Highways Agency
 - (ii) Environment Agency
 - (iii) English Nature
 - (iv) English Heritage
 - (v) Cambridgeshire County Council
 - (vi) Cambridge City Council
 - (vii) East Cambridgeshire District Council

- (viii) Forest Heath District Council
- (ix) North Herts District Council
- (x) Mid Beds DC
- (xi) Essex County Council
- (xii) Suffolk County Council
- (xiii) Cambridgeshire Chamber of Commerce

Effect on Annual Priorities and Corporate Objectives

17.	Affordable Homes	None
	Customer Service	None
	Northstowe and other growth areas	Traffic for the new development will be using the A14 corridor. This may therefore create an additional contribution to nitrogen dioxide concentrations from those vehicles whose trips are ultimately generated by the construction or population of the new town.
	Quality, Accessible Services	This project continues and expands the work carried out by this Department to protect public health and the environment.
	Village Life	In developing an action plan to reduce emissions in these areas we will be improving the environment of those villages and the lives of people living in those villages adjacent to the A14 road network.
	Sustainability	The work undertaken has highlighted an unsustainable rise in transport emissions in an area that may impact on residents' health. This needs to be addressed within the confines of the tools available and may bring additional benefits particularly in the reduction of carbon emissions which contribute to global warming.
	Partnership	In order to effect an improvement in air quality a number of partnerships will have to be strengthened. These include relationships with the Highways Agency and Cambridgeshire County Council.

Conclusions/Summary

- 18. The detailed assessment concluded that both ambient monitoring and dispersion modelling supported the view that there were some locations adjacent to the A14 where national air quality targets may not be met. At some properties closest to the A14 a reduction of up to 8µg/m³ of nitrogen dioxide may need to be achieved to attain the health based target.
- 19. Following the detailed assessment, subject to ratification by DEFRA and comments received during the consultation process, it is recommended that the boundary to form the air quality management area extends from the Bar Hill junction to a point close to the Milton interchange, including some residential areas within the parishes of Histon, Impington, Girton, Madingley and Dry Drayton as at Appendix 1.

Recommendations

- 20. It is recommended that the Portfolio Holder,
 - (a) endorses the report on the detailed assessment of nitrogen dioxide,
 - (b) agrees to the commencement of the consultation on the air quality management boundary area, and

- (c) notes the requirement to declare an Air Quality Management Area, as detailed in Appendix 1, subject to any comments received during the consultation exercise.

Background Papers: the following background papers were used in the preparation of this report:

Air Quality Review and Assessment – Cambridgeshire Local Authorities Updating and Screening Assessment 2006.

Detailed Assessment of Nitrogen Dioxide Along the A14 Corridor South
Cambridgeshire District Council. November 2006.

The Role of the Highways Agency in Local Air Quality Management, January 2005.

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