



DERBY CITY COUNCIL

COUNCIL CABINET
6 June 2006

ITEM 6

Cabinet Member for Environment and Direct Services

Detailed Assessment of Air Quality in Derby – Nitrogen Dioxide

SUMMARY

- 1.1 Council Cabinet (15 June 2004) previously considered a report entitled 'Updating and Screening Assessment of Air Quality' and recommended that detailed assessments be carried out for the 3 air pollutants of greatest significance in the city. These assessments represented a major undertaking for Environmental Heath and Trading Standards and Cabinet considered the first report (the detailed assessment of benzene levels in the city) on 25 April 2006. This is the second report of three and considers levels of nitrogen dioxide (a traffic-related pollutant) in the city and suggests alterations to the boundaries of the existing Nitrogen Dioxide Air Quality Management Area (AQMA) and declaration of a new AQMA. The final report will consider PM₁₀ dust particulate pollution.
- 1.2 Subject to any issues raised at the meeting, I support the following recommendations.

RECOMMENDATION

- 2.1 That Members note that nitrogen dioxide levels in certain areas of the city exceed National Air Quality Objective levels.
- 2.2 That the boundaries of the city's existing Nitrogen Dioxide Air Quality Management Area require revision and that Members approve the revisions in principle, pending public contribution.
- 2.3 That a further AQMA be declared in Spondon and that Members approve this in principle, pending public consultation.
- 2.4 That Members agree to the reports proposals for public consultation on this matter, including a report to Area Panel 1.
- 2.5 That a further report be made to Cabinet, following public consultation, concerning the making of new Air Quality Management Order under Section 83 Environment Act 1995.

REASONS FOR RECOMMENDATION

- 3.1 Monitoring data shows no strong upward or downward trend in nitrogen dioxide levels in the most polluted parts of the city. In the absence of firm indications of a downward trend, pollution levels will continue to exceed the government's target for NO₂, which was for annual average levels to be no more than 40µg/m³ by 31 December 2005. Comprehensive new data and improved understanding of pollution levels in the city have shown that the boundaries of the existing NO₂ AQMA (declared in 2002) need to be revised and a further AQMA declared in part of Spondon.
- 3.2 DEFRA requires all Local Authorities to consult with statutory consultees, stakeholders and the general public on the outcome of Detailed Assessment reports.



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Report of the Director of Environmental Services

Detailed Assessment of Air Quality in Derby – Nitrogen Dioxide

SUPPORTING INFORMATION

- 1.1 Full copies of the Detailed Assessment report are available on request, or via CMIS or in the Members Rooms. The contents of the report are summarised below.
- 1.2 The principle source of nitrogen dioxide emissions in Derby is road transport. Nationally, emissions have steadily decreased year on year mainly due to improved vehicle technology and the growing use of catalytic converters on car exhausts. The benefits of cleaner vehicles have, however, been offset to a substantial degree by the rapid and ongoing growth in traffic. As a result, there are many locations in Derby and throughout the country near busy roads where pollution levels continue to exceed government targets.
- 1.3 Exposure to nitrogen dioxide over prolonged periods can cause shortness of breath and chest pains. People suffering from an existing respiratory condition (e.g. asthmatics and those with heart and/or lung conditions), are most commonly affected. Nitrogen dioxide can also form nitric acid (a component of 'acid rain'), when oxidized in the air and plays a role in the formation of ozone and photo-chemical smog at ground level.
- 1.4 There are two national air quality standards for nitrogen dioxide that are set at levels below which health effects are unlikely to be experienced:
 - An hourly average of $200\mu\text{g}/\text{m}^3$, which must not be exceeded more than 18 times per year
 - An annual average level of less than $40\mu\text{g}/\text{m}^3$

Of the two standards, it is the latter that is exceeded in certain parts of the city. Where exceedences occur, local authorities are under a statutory duty to declare affected areas as AQMA's and to adopt an Action Plan to reduce pollution levels within the area

- 1.5 In 2001 a nitrogen dioxide AQMA was declared by the Council incorporating approximately 1600 dwellings adjacent to the inner and outer ring roads. In September 2002, the AQMA was slightly reduced in size, following further monitoring, encompassing approximately 1500 dwellings. The AQMA boundaries have not been altered since.

- 1.6 Since that time, the Pollution Section of Environmental Health and Trading Standards has continued to monitor pollution levels in the city at 86 locations, principally within the AQMAs. Whilst this approach has been resource-intensive and has delayed completion of the assessment, most other local authorities have relied on computer prediction modelling to complete their assessments which, whilst relatively quick, is a methodology prone to substantial errors and assumptions. In contrast, Derby's detailed assessment is based on actual measured air quality data, compiled over past 5 years. This is a sufficient length of time for officers to have a high degree of confidence in the validity of the data, despite the influence of external variable factors, such as abnormal weather conditions (as experienced in 2003).

1.7 **Setting AQMA boundaries**

In consultation with DEFRA and using roadside monitoring data, it has been calculated that there should be no locations in Derby beyond 14m from the roadside that will be likely to exceed the air quality standard, even adjacent to the busiest and most polluted roads/junctions. Using this 'rule', the existing AQMA has been re-mapped and now more accurately represents those areas of the city that are likely to exceed the air quality standard. It is proposed to join the inner and outer ring road AQMAs along Osmaston Road, as well as other minor boundary changes. It is also proposed to declare a separate new AQMA in Spondon, including dwellings adjacent to Brian Clough Way (A52), Nottingham Road and Derby Road.

- 1.8 Overall, there will be a net increase in the geographical extent of the AQMAs. It is important to note, however, that this is not an indication of a worsening in air quality, but an outcome of more comprehensive and sophisticated monitoring and modelling, which has enabled polluted areas to be more accurately defined.
- 1.9 Location plans showing the extent of the existing and proposed AQMAs are shown in the Appendices to this report.
- 1.10 Following declaration of a new AQMA, local authorities are obliged to produce an action plan to reduce pollution levels in that area. The Council has however, already adopted a Nitrogen Dioxide Action Plan (in 2003), which is now incorporated within the Local Transport Plan (LTP2). Since the Action Plan proposals are not location-specific, they are equally applicable to the proposed new Spondon AQMA. The Plan does not therefore require revision.
- 1.11 DEFRA requires Local Authorities to consult statutory consultees, stakeholders and the general public on the outcome of air quality detailed assessments and when new AQMAs are proposed or existing areas revised. It is proposed that the majority of statutory consultees and stakeholders will be invited to submit comments on electronic copies of the full report. The report will also be posted on the Council's web-site and hard copies made available at libraries and other council buildings with public access. A more intensive, targeted approach is proposed for residents in the Spondon area and households included in the revised boundaries of the existing AQMA, including the use of leaflets with tear-off reply slips and posters in buildings where the public regularly congregate.

OTHER OPTIONS CONSIDERED

2. Local authorities are required to declare Air Quality Management Areas where pollution levels are unlikely to meet government objectives. They are also required to adopt action plans to reduce pollution levels within those areas and to regularly review and assess ongoing air quality. The proposed changes to the AQMA boundaries and the new AQMA in Spondon are an outcome of this process. No other options are therefore available.

For more information contact:

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Background papers:

Full report: Detailed Assessment of Air Quality in Derby – Nitrogen Dioxide (pdf version via CMIS
<http://cmis.derby.gov.uk/CMISWebPublic/Binary.ashx?Document=6661> ;
hard copies available on request from Julian de Mowbray)

List of appendices:

Appendix 1 – Implications
Appendix 2 – Existing Inner & Outer Ring-Road NO₂ AQMAs
Appendix 3 – Proposed Boundary of the Revised Inner & Outer Ring-Road AQMA
Appendix 4 – Proposed Boundary of New NO₂ AQMA in Spondon

IMPLICATIONS

Financial

1. None

Legal

2. None

Personnel

3. None

Equalities impact

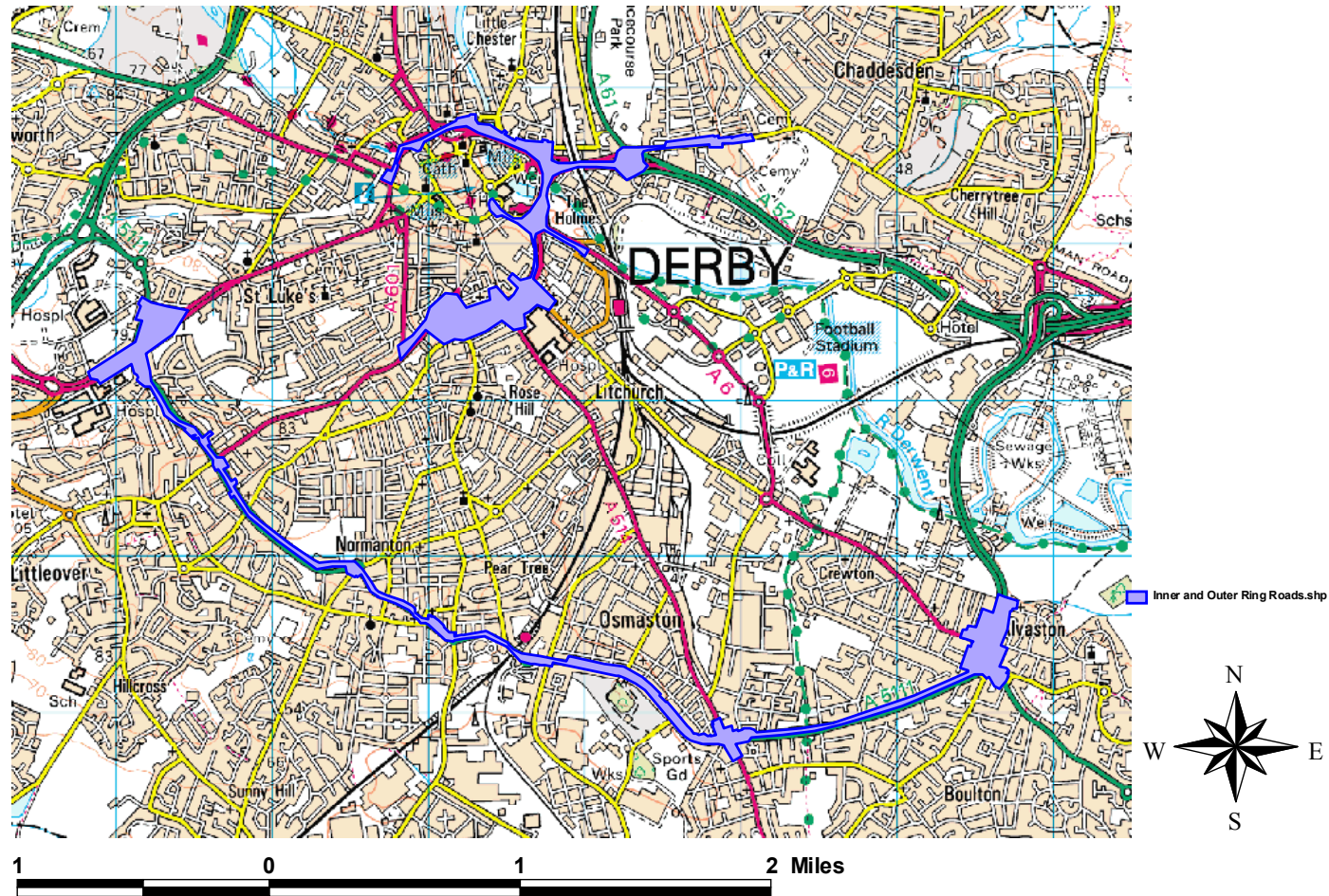
4. None

Corporate priorities

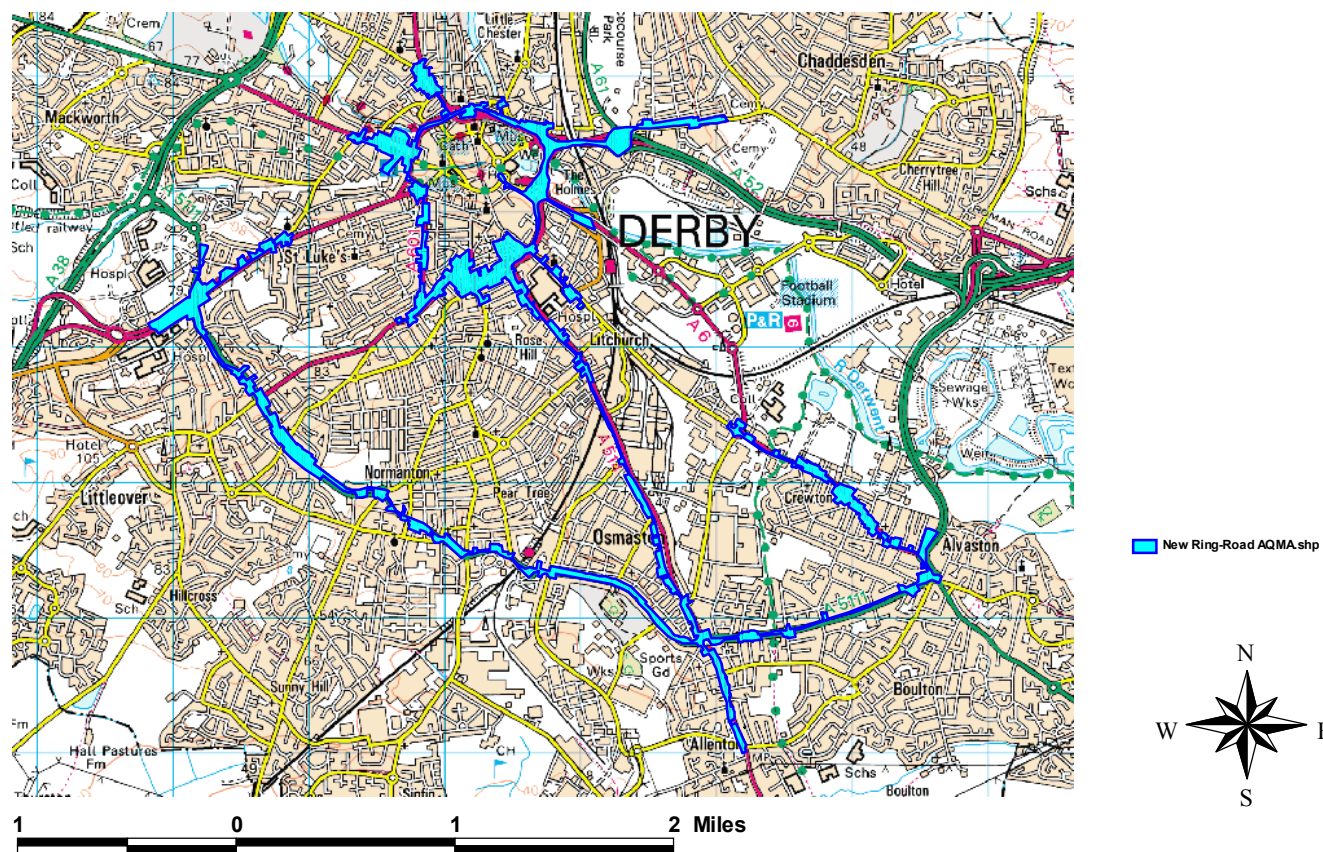
5. Improve the quality of life in Derby's neighbourhoods by making Derby cleaner and greener.

Build healthy and independent communities by improving the health of our communities.

Existing Inner & Outer Ring-Road NO₂ AQMAs



Proposed Boundary of the Revised Inner & Outer Ring-Road AQMA



Proposed Boundary of New NO₂ AQMA in Spondon

