

1.1 Introduction

- 1.1.1 This report provides the final part of the three-stage review and assessment process for the London Borough of Richmond upon Thames, which assists with the local air quality management process, laid down by Part IV of the Environment Act 1995.
- 1.1.2 The purpose of the Review and Assessment of air quality is to enable local authorities to appraise current and future air quality for their geographical area, against the current NAQS objectives, for the year 2005. These are set out in the Air Quality Regulations 1997. If the results of this assessment are such that the objectives are unlikely to be met by the year 2005, the local authority is then required to designate an Air Quality Management Area (AQMA) and prepare a written action plan.
- 1.1.3 The Council has followed the phased approach required by the Government and has undertaken the first and second stages of the review and assessment. The Stage 1 review and assessment report for the London Borough of Richmond upon Thames indicated the possibility of an exceedence of the NAQS objectives for the following pollutants:
- *Nitrogen dioxide*
 - *PM10*
- 1.1.4 The review and assessment process is itself under review and the revised strategy is not expected to come into force until early this year (see letter to all CEHO's from DETR dated 21 July 1999). In anticipation of this, the DETR has written to all local authorities to advise that the current PM10 objective is to be replaced with the EC Air Quality Daughter Directive Stage 1 limit value (simplified to 'Daughter Directive', throughout the document). It has further advised that local authorities should focus on this suggested revision and has provided a document containing informal assistance (Assistance with the Review and Assessment of PM10 Concentrations in relation to the proposed EU Stage 1 Limit Values (99)).
- 1.1.5 This report has used the most up to date, known information and methods currently available to assess air quality in the London Borough of Richmond upon Thames. Although the report provides a comprehensive modelling prediction it has, of course, not been possible to model every potential source and circumstance.

1.2 Development of Review and Assessment

- 1.2.1 In the third stage of review and assessment, local authorities are required to undertake an accurate and detailed review and assessment of current and future air quality. The above-mentioned Guidance (paragraph 9.1 of LAQM.TG4 (98)) advises that:
- "Local authorities will need to predict whether a failure to achieve an air quality objective by the end of 2005 is likely. This will be a crucial factor, which will trigger the designation of air quality management areas (AQMAs)."
- 1.2.2 The guidance further advises that a local authority should investigate the areas within its boundaries where there is the likelihood of a failure to achieve air quality objectives and the potential for exposure of individuals. The authority should also estimate the magnitude and geographical extent of such exceedences.

1.3 Exposure

- 1.3.1 The NAQS objectives are based on the recommendations of the DETR's Expert Panel on Air Quality Standards (EPAQS), European Union standards and WHO guidelines. These all recognise that the potential impact on human health is a crucial factor and hence it is human exposure to air pollutants in non-occupational settings that needs assessment. The exposure of individuals to air pollution is highly complex however and dependant on many individual factors. Therefore, to simplify this issue, the DETR have established the following criteria, which assess the exposure of individuals, over the averaging time of the prescribed objective and are defined in the guidance (paragraph 1.14 of LAQM TG4):
- For objectives with short averaging times (SO₂ and peak hour NO₂), the review and assessment should focus on any non-occupational, ground level, outdoor location, given that exposures over such a short period are potentially likely;
 - For objectives with longer averaging times (lead, PM10 and annual average NO₂), the review and assessment should focus on the following ground level, outdoor, non-occupational locations: background and roadside locations and other areas of elevated pollutant concentrations. This is applicable only where a person might reasonably be exposed (e.g. in the vicinity of housing, schools or hospitals, etc) over the relevant averaging time of the objective.
- 1.3.2 London is highly urbanised with a high population density. In the Stage 1 and 2 reports, prepared previously, the focus was to identify and then screen the major pollution sources, on the assumption that there is a likelihood of human exposure within such a dense conurbation. This assumption however is no longer sufficient for Stage 3, which seeks to determine the geographical extent of areas of exceedence of the NAQS objectives. To facilitate this assessment for the local authority, the SEIPH has determined the extent of the exceedence, in terms of distance (metres) from the kerb to the limit of the predicted exceedence. For SO₂ the extent of the area of exceedence has been identified, although the nature of this prediction is such that is the precise extent of the exceedence is uncertain. Contour maps have also been produced to show the geographic extent of exceedences.

1.4 DETR Guidance

- 1.4.1 Reference was made earlier to DETR LAQM guidance TG4 (98), which refers in general terms to the use of detailed emission inventories, validated dispersion models and high quality continuous monitoring. Separate LAQM guidance notes have been produced for each of these aspects. Importantly the issue of background pollution is also addressed in LAQM.TG4 (98). There is however limited Stage 3 guidance for each specific pollutant.
- 1.4.2 The exception to the above is for PM10, where the informal assistance document highlights the importance of making clear the assumptions used and also the concerns surrounding the treatment of emissions and background concentrations.
- 1.4.3 Paragraph 2.04 of circular 15/97 however advises that the guidance is not prescriptive and that local authorities should use professional and technical judgement to decide how best to conduct an air quality review and assessment, in the light of local circumstances