

Executive Summary

This is the technical report for the third and final Stage of the Review and Assessment of air quality for the London Borough of Richmond upon Thames. The Local Air Quality Management process under Part IV of the Environment Act 1995 requires that each local authority reviews and assesses air quality within its geographical area against the standards and objectives given in the Air Quality Regulations 1997.

The National Air Quality Strategy is currently undergoing a revision, which is not expected to be complete until the early part of this year. Despite this the DETR have written to all local authorities to advise that they should consider the proposed revision for the PM10 objective, rather than the existing objective. This report considers both the existing objective and the proposed revision for PM10.

The third stage of the review and assessment process requires a detailed assessment of both current air quality and future air quality across the Council's geographical area. This stage is only undertaken for those air pollutants identified by the previous reports. These are as follows:

- Nitrogen dioxide
- PM10

Full details of the modelling process are given in the appendices to the report, along with details of the assumptions used, model inputs and the uncertainty analysis. These should be carefully studied to understand the full basis and limitations of the predictions. The modelling system, which has been developed by the SEIPH-ERG, relies heavily on our understanding of air quality in London and the southeast, and has been gained from operating the London and other neighbouring air quality networks.

Model assessments have been undertaken for "worst case" meteorological years. This assumes that the meteorological conditions in, for example, 1995 are repeated in 2004/5. In summary the "worst case" years are:

- **Met. Year 1995** for the prediction of the highest 15 minute concentration of SO₂;
- **Met. Year 1996** for the prediction of both the existing and proposed NAQS objectives for PM10;
- **Met. Year 1997** for the prediction of annual average concentration of NO₂;
- **December 1991** which represents the period where the highest hourly concentration of NO₂ was recorded, in the UK.

Predictions for a "typical" pollution year are also included for comparison purposes. In summary these are, met. year 1997 for PM10 and 1996 for NO₂.

The inputs used in the traffic modelling process have been obtained from the LTS transportation model, DETR's Rotating Census traffic data and local authority traffic counts. Input data for modelling the Part A industrial sources has been taken from the LRC's London Emission Inventory, local authority information and through the Environment Agency, via access to the Public Register and numerous personal communications.

An uncertainty analysis of NO_x and NO₂ has been undertaken to improve understanding of the inherently uncertain prediction of air quality into the future. This is over and above validation of the model itself.

The report has been laid out to allow for a rapid examination of the results of the review and assessment and for a more thorough examination of the methodology used, etc as required.

The main findings of the report are that exceedences of the NAQS objectives are predicted for the following pollutants only:

- Nitrogen dioxide (annual average)
- PM10 (99th Percentile and Daughter Directive)

On this basis the Council are advised to confirm that there is exposure as defined by the LAQM. TG4 (98) guidance and once satisfied to begin the process of consultation leading to the declaration of Air Quality Management Area.