

# Stage 4 Review and Assessment for the London Borough of Richmond upon Thames



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## 4 Conclusion

This report fulfils the requirements of the DEFRA guidance for Stage 4 and permits the LBRuT to review and update its Stage 3 report and address relevant issues as part of the continuing LAQM process. The Stage 4 has used both improved modelling techniques and also an improved treatment of emissions.

The predictions for the 2005 base case take into account a predicted vehicle growth, improvement in vehicle technology leading to lower emission releases and changes to the background. These result in predicted concentrations that will still exceed the objectives. In the case of NO<sub>2</sub> the area predicted as likely to exceed is greater than the equivalent area for PM10. This confirms that the annual mean nitrogen dioxide objective is more stringent than the daily mean objective for PM10.

The extent by which the predictions exceed the objective has been derived from a selection of locations identified within the AQMA and all of these are predicted to exceed the NO<sub>2</sub> objective in the modelled 2005 base case.

For the first time an accurate source apportionment has been undertaken within the LBRuT. To determine the separate contributions from the road and background sources a series of detailed tests were run, based on NO<sub>x</sub> as the primary pollutant rather than NO<sub>2</sub>. These confirm that approximately 45 - 68% of the concentrations relate to the road transport with the remainder relating to the background sources. However the tests further confirm that the background can also be partly ascribed to road transport sources, such as those outside the borough. For NO<sub>x</sub> approximately half the background contribution arises from such road transport sources.

For PM10 the proportions vary from that of NO<sub>x</sub> as a result of the different components that contribute to total PM10. In this instance the contribution from the background sources is most significant (between 73 – 90%), whereas road transport as a primary emission varies between 10 – 26%. Of the latter again as expected, it is HGVs that predominate as the main source. Of the total background sources, road transport contribute between 7.3 and 9%, with the remainder arising mostly from secondary and coarse components, which are beyond the control of local authorities.

The LBRuT is also required to consider actions that might be undertaken to reduce pollutant concentrations in order to work towards the prescribed objectives. To aid this process an agreed scenario was tested and the results of this highlight the complexity in dealing with this issue. The result for PM10 was that no location was predicted to exceed the AQS objective, however for NO<sub>2</sub>, areas close to the major roads were still predicted to exceed the AQS objective. Therefore to ensure complete compliance across the LBRuT additional pollution reduction measures would be required.

